S. HRG. 100-748

EXTENDING TITLE II OF THE ENERGY POLICY AND CONSERVATION ACT

HEARING

BEFORE THE

COMMITTEE ON ENERGY AND NATURAL RESOURCES UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

SECOND SESSION

ON

S. 2203

MAY 12, 1988

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Committee on Energy and Natural Resources

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EXTENDING TITLE II OF THE ENERGY POLICY AND CONSERVATION ACT

THURSDAY, MAY 12, 1988

U.S. SENATE,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
Washington, DC.

The Committee met at 2:17 p.m. in room SD–366, Dirksen Senate Office Buidling, Hon. Dale Bumpers, presiding.

OPENING STATEMENT OF HON. DALE BUMPERS, U.S. SENATOR FROM ARKANSAS

Senator BUMPERS. The Committee will come to order.

The purpose of today's hearing is to take testimony on S. 2203, an Administration bill to extend Title II of the Energy Policy and Conservation Act.

Title II provides the basic statutory authority for the United States' participation in the International Energy Program and the International Energy Agency. It provides the President with authority to prescribe rules for international oil allocation if an oil supply crisis occurs and provides for an energy information system.

Title II also provides authority for oil company participation in IEA emergency information and oil-sharing systems. In order to facilitate that participation, Title II provides a limited antitrust defense and a breach of contract defense for actions taken under IEP.

The Congress has extended the EPCA IEA authorities eleven times. The major issue has been the duration of the extension of the antitrust defense. Now the Administration proposes to extend Title II, including the antitrust defense, for five years.

Witnesses today from the Department of Energy and the Department of State will tell us why they believe that needs to be done.

If there are no objections, I will insert a copy of the bill at this point in the hearing record.

[The text of S. 2203 and statements for the record from Senators Metzenbaum and McClure follow:]

II

100TH CONGRESS
2D SESSION

S. 2203

To extend the expiration date of title II of the Energy Policy and Conservation Act.

IN THE SENATE OF THE UNITED STATES

MARCH 22 (legislative day, MARCH 21), 1988

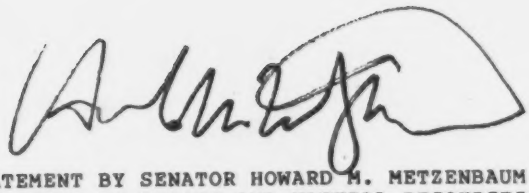
Mr. JOHNSTON (by request) introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

---

A BILL

To extend the expiration date of title II of the Energy Policy and Conservation Act.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section 281 (42 U.S.C. 6285) of the Energy Policy and Conservation Act is amended by striking "1988" both places it appears and inserting "1993" in its place.



STATEMENT BY SENATOR HOWARD M. METZENBAUM
COMMITTEE ON ENERGY AND NATURAL RESOURCES
S. 2203
MAY 12, 1988

I am pleased that this hearing is being held on legislation to extend Title II of the Energy Policy and Conservation Act. This extension will allow the United States to continue its participation in the International Energy Program.

I have long had serious reservations about this nation's participation in the IEP. The United States might be required to divert scarce supplies to other member countries in the event of a worldwide oil crisis under the program's Emergency Sharing System. I do not favor that obligation on the part of the United States. It appears to me to be one-sided, since it is more likely that the U.S. could be called upon to share its oil while most of the other signatories do not have the oil to share.

I have also been very critical of the need to extend antitrust and breach of contract defenses to oil companies who participate in the program. For that reason, when Title II was last extended in 1985, I successfully attached an amendment which allows for Congressional review and possible disapproval of any U.S. implementing plan which broadens these antitrust defenses. In light of that amendment and its threat of close Congressional scrutiny, the latest draft plan of action does not extend the defenses to additional types of oil company activities.

Nevertheless, U.S. participation in the International Energy Program raises serious questions about this nation's ability to effectively respond to another oil supply disruption. The possible diversion of our traditional imports during an emergency will only exacerbate the country's lack of a comprehensive, rational energy policy.

Instead of learning from mistakes made during the 1970's energy crisis, this Administration has chosen to plunge head-first into another catastrophic scenario, where price and allocation controls will be imposed in the heat of the moment. Lack of advance planning and reliance on the free market to regulate energy prices and supplies will leave the U.S. ill-prepared should another oil embargo occur, and will place an unfair burden on low and middle-income residents.

In fact, this Administration has consistently opposed measures that would prepare the nation for another energy crisis. Such measures would include maintaining strong automobile and appliance efficiency standards, supporting the research and development of alternative fuels and energy sources, and developing a workable strategy for drawing down the Strategic Petroleum Reserve.

In sum, I believe that planning is the key to avoiding another crisis. The international cooperation resulting from IEP activities may help to prevent or reduce the impact of a supply disruption. However, unless the U.S. and other member countries take action to reduce demand and increase reserves, no international system will be effective during a crisis.

OPENING STATEMENT
SENATOR JAMES A. McCLURE (R-ID)
COMMITTEE ON ENERGY AND NATURAL RESOURCES

S. 2203, INTERNATIONAL ENERGY AGENCY EXTENSION

Good afternoon. Before we begin, I would like to make a brief statement in support of early enactment of S. 2203. This measure would extend for five years a critical authority that is integral to the United States' capability to respond to a severe interruption of international energy supplies.

What energy emergency preparedness we possess as a nation relies on the Energy Policy and Conservation Act. Without these fundamental authorities the evolutionary process for upgrading our national and international capability to respond to a severe energy supply interruption would be non-existent.

I continue to believe that the evolution of our energy emergency preparedness must be a dynamic, not static, process. The IEA continues to provide a catalyst in this process. Their continuing tests of the IEA oil sharing program have added significantly to its potential effectiveness. The recent IEA exercise to test coordinated stock draw-down demonstrated the benefits to be achieved from the Strategic Petroleum Reserve during an emergency if such draw-downs are initiated early in an emergency on a coordinated basis. Further improvements of this caliber in the IEA emergency response system are to be encouraged.

But what I sense is a growing lack of interest from certain IEA member countries and from many of the people who will benefit most from the IEA emergency response system. There is instead increased attention by the IEA on issues that are more appropriately addressed in other international forums than the IEA. U.S. participation in the IEA was not intended to extend to policy formulation on such issues as the

environment and acid rain, or issues of trade. That is not to say that consideration of such issues should not be reflected in IEA discussions, but the IEA membership was not constituted to formulate policy recommendations in these areas, nor should it be.

If the IEA is to be effective when needed, it must continue to concentrate its efforts in the areas for which it was constituted: the emergency response system and strategic stocks. Strategic stocks held in IEA member countries are now equivalent to more than 160 days of 1986 net imports, compared to the minimum legal obligation of 90 days. However, further improvements are needed in strategic stocks by several IEA members who continue to fail to meet their IEA obligations in this regard.

I raise these points not to be critical of the IEA, but because there is a tendency, in the present political environment where energy issues do not receive the attention they deserve, to reflect on our accomplishments to date.

We must not loose sight of the fact that we are now experiencing rising oil imports. The present IEA information system is important to our understanding of international oil markets. In my judgement, the IEA information system would benefit from a strengthening of the IEA as a forum for multilateral producer-consumer discussions.

A critical component of the United States' energy emergency preparedness program is maintaining a continuing commitment to the International Energy Program. Only effective United States participation in the International Energy Agency can assure our mutual energy preparedness in the event of a severe interruption of international oil supplies. All of us are fully aware of the mutual and critical interdependence of the economic and energy security of the of the world and we must not loose sight of that fact.

Senator BUMPERS. Our first witnesses today will be Secretary Martin from the Energy Department and Deputy Secretary John Ferriter of State. Secretary Martin, would you please proceed.

STATEMENT OF WILLIAM F. MARTIN, DEPUTY SECRETARY, DEPARTMENT OF ENERGY

Mr. MARTIN. Thank you very much, Senator. I have a statement for the record, if I could submit that, please, and make a short summary.

Senator BUMPERS. The full statement will be entered in the record.

Mr. MARTIN. Mr. Chairman, this is a good opportunity to talk about EPCA. It is also a good time to think about the IEA and its relevance in the world of today.

You will remember that IEA was founded in a period of crisis after '74. The heart and soul of that agreement at the time was the emergency system. I had the pleasure of serving in IEA from '77 to '81 as assistant to the Director. I saw that organization grow beyond the emergency system. In fact, it has done a lot of good things in the last ten years.

I would like to recount a couple of them. Number one, in the late seventies the agency agreed to twelve principles for energy policy which are very sound and which member countries have agreed to.

They also developed a long-term office to look at how we could diversify our energy sources away from the volatile oil situation in the Persian Gulf.

And when 1979 came around, you will remember the Iranian revolution. The amount of oil lost from the world oil market was not seven percent to trigger the IEA system. So IEA countries had to band together to figure out what to do in that, what we called sub-trigger situation.

They invented some silly oil import targets and at the same time countries stocked during '79. And we learned a very important lesson at that time in the IEA, that stocks really matter in a crisis. And that was really the birth of the emphasis on the importance of building stocks in each of the IEA countries and coordinating them in the event of a crisis.

As you know, with a lot of encouragement from the Congress, we have built up our strategic petroleum reserve. I might also add, with a lot of encouragement from the Congress, we have been going around the world very hard trying to get other countries to build up their stocks.

Today we have over 900 million barrels of strategic stocks available to IEA countries to use in the event of an emergency. That means we can put three million barrels a day onto the world oil market at any time, and right now our friends and allies can put an additional two on, and that is very important.

Another reason why it is important is we would hate to see a time when we used our strategic oil reserve to prevent a crisis and a price rise and maybe other countries at the same time decided they would like to build stocks, which would basically negate the effectiveness of our strategic petroleum reserves.

And that was the message we carried, President Reagan carried, at the London economic summit in 1984, to get other countries to build stocks and to coordinate them in the event of a disruption.

And two months after the President made that demarche at the London summit, IEA had indeed agreed to a stock policy. And today we think this stock policy really is the first line of defense of IEA countries in the event of a disruption.

At the same time, we stand committed to the principles of the IEP as a last resort for meeting the problems of allocation. One of the reasons we believe deeply in it, and this has been said by Secretary Shultz and I have also heard President Reagan say it, is that that tool, the IEP, is not only an energy economic tool, it is a political statement of coordinating a very critical issue in the alliance itself.

So when we look at EPCA and the extension of EPCA which is so important to the viability of the IEP, we have to look at it as more than just a tool for emergency sharing. It really is a statement of commitment to other countries.

Let me also say that the IEA has gone beyond emergency systems into diversification. In 1981 and '82, we were concerned that the Europeans were becoming overly dependent on Soviet gas, and it was through the IEA that we got an agreement to develop the very large Troll field in the North Sea, which will balance off Soviet gas in the longer term.

Another very important issue the IEA resolved was the issue of product imports into Japan. You are very aware that producers have been going further downstream, putting a lot of product on the market and our refineries in the Gulf and European refineries have been going out of business, particularly a couple of years ago.

Japan imposes barriers on product imports, and through the IEA in 1985 we got the Japanese to agree to open up their markets to products, thereby putting less pressure on our own hard-pressed refineries.

So indeed, this gives you a sense of the IEA being more than just an organization disposed to emergency sharing. Let me say that one of the key lessons that we have learned is that the United States has to see itself as part of an integrated oil market, and our energy security over the longer term is dependent on actions in Japan, actions in Italy, actions throughout the world, because any country can put further dependence on the Persian Gulf.

And therefore, a coal plant in Italy or a nuclear plant in Japan or conservation in Belgium or stripper wells in Texas all contribute to the ultimate objective of keeping dependence on the Persian Gulf low. And that really is in my view the heart and soul of the IEA, and really why it is as relevant today as a forum for discussing how we meet this energy security challenge together.

And with that thought, I would like to ask Ambassador Ferriter, who I might add is not only Deputy Assistant Secretary of the Department of State for Energy, but he is also Chairman of the Long Term Group at the IEA looking at member government policies for 22 countries.

Thank you.

[The prepared statement of Mr. Martin follows:]

Prepared Statement of William F. Martin
Deputy Secretary
U.S. Department of Energy

Before the

Committee on Energy and Natural Resources
U.S. Senate

Washington, D.C.
May 12, 1988

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OVERVIEW

OVERVIEW

- Mr. Chairman, today I would like to address the need for a 5-year extension of the authorities of Title II of the Energy Policy and Conservation Act (EPCA) as provided in S. 2203. These authorities are essential to key U.S. obligations to the International Energy Agency (IEA) and to meaningful U.S. participation in the IEA. I would like to use this opportunity to review developments in the world energy markets, U.S. international energy security policy, and the vital role of the IEA in helping the United States meet its international energy objectives.

- The *International Energy Agency* (IEA), founded in 1974 at the initiation of the United States, is a forum for energy cooperation among 21 industrialized countries. The IEA is designed to promote reduced dependence on imported oil through energy efficiency and diversification, to strengthen preparedness to deal with energy emergencies, and to share the burden of future oil disruptions.

- The oil price increases of the 1970's and *the energy policies and programs of IEA countries* have contributed to significant declines in oil use, substantial increases in the production of non-OPEC oil, and reduced dependence on the Persian Gulf compared to prior peaks. World oil consumption in 1985 was 5 to 6 million barrels per day lower than in 1979, non-OPEC production was 6 million barrels per day higher, dependence on oil from the Persian Gulf was cut in half, and strategic oil stocks were increased fivefold. A growing surplus of world oil production capacity emerged, up to 10 million barrels per day.

- These developments contributed to a decline in world *oil prices* beginning in 1981, which greatly accelerated in 1986. The 1986 price drop had substantial benefits in reducing costs to consumers and stimulating economic growth, but also posed substantial risks. The 1986 price decline led to a 1 million barrel per day decline in U.S. oil production, a renewed rise in oil consumption and imports, and growing concern by the United States and other IEA countries that energy conservation and diversification could slow down and dependence on the Persian Gulf could rise.

- The Department's *Energy Security* report, prepared at the request of President Reagan to address such concerns, indicated that if low oil prices are sustained, U.S. oil imports could rise to 8 to 10 million barrels per day by 1995, 50 percent of projected oil requirements, and that the import dependence of other industrialized countries will also grow. With the bulk of the world's oil reserves in the Middle East, the world market is expected to rely increasingly on imports from the Persian Gulf. *The Persian Gulf could provide nearly 50 percent of world oil production by 1995, up from 25 percent today.* This prospect underscores the *continued need for international cooperation* to improve energy security. One of the key lessons learned from the 1970's was that world energy markets are interdependent. Individual nations cannot "go it alone:" they are affected by the decisions and reactions of all other major market participants, in both normal and abnormal times.

- Recognizing the interdependence of world energy, and particularly oil, markets, the *United States is pursuing an international energy security policy* to promote a diverse and flexible international energy supply system, remove barriers to the economic development of energy supplies, and improve the international capability to respond to energy emergencies. *Participation in the IEA is critical to the success of this international strategy.*

- *The IEA has helped implement U.S. energy security objectives and policies.* IEA Ministers have called for higher levels of oil emergency stocks and the coordinated use of those stocks in the event of oil disruptions. They agreed on the need for the removal of restrictions on oil

product trade, leading to Japan's decision to open its market to increasing amounts of product imports. They called on member countries to reduce dependence on Soviet gas imports, setting the stage for greater development of European gas supplies. And they have promoted removal of other trade and investment barriers which hamper the economic development of energy resources in IEA countries.

- *One of the major accomplishments of the IEA has been in promoting policies and procedures to respond to energy emergencies.* In the event of a major oil supply disruption, the IEA has on hand the Emergency System established under the IEP Agreement. To fulfill their obligations under the system, the IEP requires that member countries maintain 90-days of emergency oil stocks, have the ability to reduce oil consumption by 10 percent, and provide legal authorities for both the national governments and their companies to participate in a system for sharing oil supplies. In the event of activation of the system, IEA countries have committed to reduce oil demand (or draw down oil stocks in excess of IEA stock obligations) and to share available oil supplies according to an established formula.

- *The U.S. Government remains firmly behind all of our commitments to the IEP*, including the Emergency System. The Administration has urged that alternative measures, particularly high levels of strategic oil stocks and the coordinated use of those stocks, should be utilized first in a major disruption as long as practicable. Through the IEA the United States has been able to build consensus on the need to improve the quality and quantity of strategic stocks. Much has been accomplished. Government-owned or -controlled stocks of IEA countries are over 935 million barrels today, compared to 160 million in 1978. These stocks could be used to release 3 to 5 million barrels per day onto the world oil market in a severe disruption. And the IEA is finalizing procedures, known as the Coordinated Emergency Response Measures, to coordinate emergency stockdraw. These procedures were tested in early 1988 in an IEA exercise.

- *Renewal of EPCA Title II authorities is crucial* to allow the United States to meet its obligations under the IEP emergency program and to demonstrate our sustained commitment to the IEA and all of its programs. The IEA emergency information and sharing systems are designed to rely primarily on the voluntary participation of private companies. Section 252 of the EPCA makes U.S. company participation possible by providing limited antitrust and breach of contract defenses needed for them to participate in voluntary supply actions, to provide information essential to the emergency program, to consult at IEA meetings, and to take part in tests of the IEA emergency data and sharing systems. The Department of Justice and the Federal Trade Commission, who monitor closely U.S. company participation in these activities, have consistently concluded that the *companies' involvement has had no anti-competitive effects.*

- EPCA Title II contains two other provisions that are required by U.S. obligations under the IEP. *Section 251* provides authority for mandatory international oil allocation that the IEA requires be available as a last resort if voluntary sharing fails to achieve its goals in the event of an activation of the Emergency System. *Section 254* provides authority for the Executive Branch to provide to the IEA, as necessary, information and data on the oil industry.

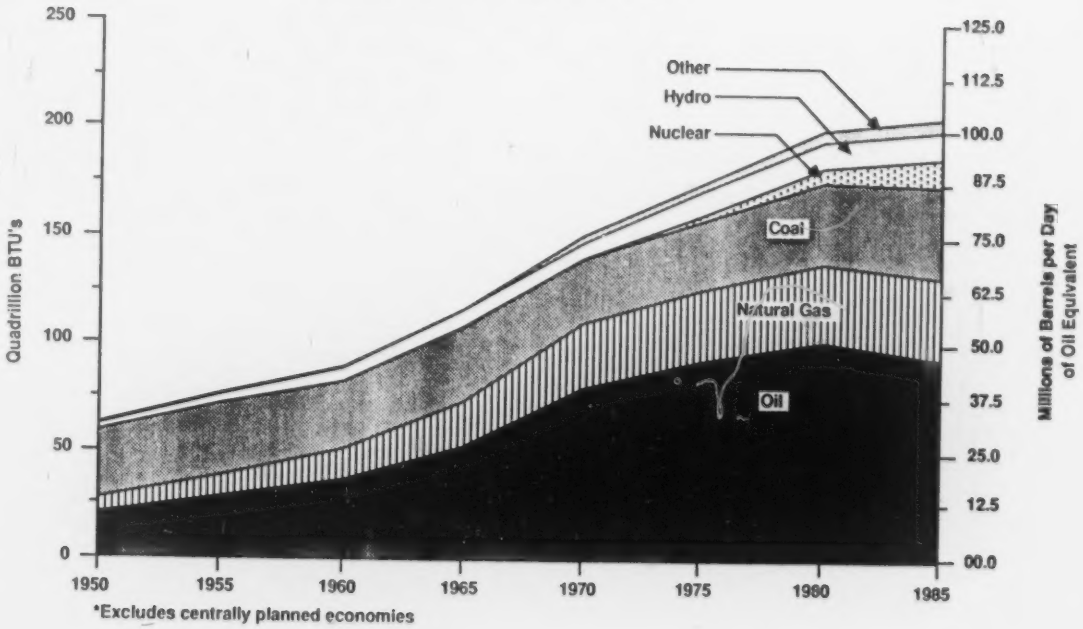
- *EPCA Title II authorities should be extended to June 30, 1993*, to reaffirm to our IEA partners our strong commitment to the IEA and its programs. If section 252 were permitted to expire, U.S. oil companies would be compelled to suspend their participation in the IEA, and this would cast doubt on the Government's seriousness of purpose in encouraging their involvement.

- The IEA Emergency System is not just an oil sharing program and, in fact, oil allocation has never been activated. The system also provides IEA member countries with detailed and timely information on production, stocking and trading patterns in the world oil market and access to the collective expertise of the companies which operate in it. This enhances the transparency of oil markets for IEA members and can helps them improve their emergency response policies. We solicit the support of the Congress for timely action on S. 2203.

DEVELOPMENTS IN THE WORLD ENERGY MARKET

THERE HAVE BEEN IMPORTANT CHANGES IN WORLD ENERGY MARKETS

Global Energy Use, 1950-1985*



*Excludes centrally planned economies

Source: Energy Security report.

THERE HAVE BEEN IMPORTANT CHANGES IN WORLD ENERGY MARKETS SINCE 1950

- World energy use (excluding use of traditional fuels such as wood) has more than tripled since 1950, growing at a compound annual rate of more than 3 percent. Significantly, however, energy consumption per unit of economic output has fallen sharply since 1973.

- Oil has fueled most of the increase in world energy consumption since World War II. World oil use grew steadily through 1979, in response to world economic expansion, growth in transport requirements, and the growing demand for electricity. At the beginning of the 1950's, oil represented less than one-third of world energy requirements; by 1980 oil use had risen five-fold and its share of energy demand rose to about 50 percent.

- In response to the oil price increases of the 1970's, world oil use declined through 1985 when it was 5 to 6 million barrels per day below its 1979 peak. This trend was reversed with the sharp decline in oil prices in 1986, and world oil consumption is again on the rise. While oil is still the world's most significant single source of energy, there have been important increases in the production and use of coal, natural gas, nuclear power, and hydroelectric power and renewables. The combined use of these other fuels has risen by 16 to 17 million barrels per day of oil equivalent since 1973.

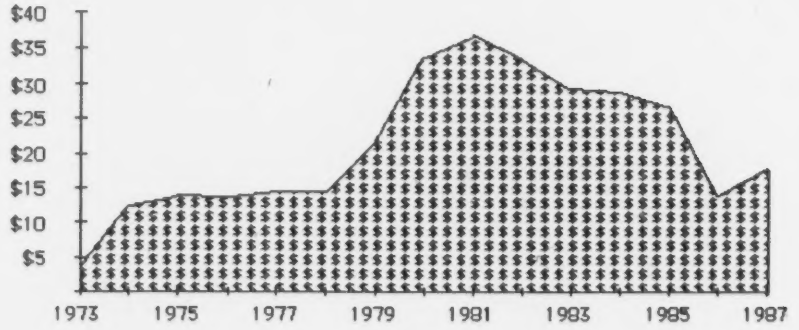
- Coal use declined during the 1960's, but began to rebound in 1975 and has increased substantially since its turnabout, accounting for 20 percent of the world's energy use today. World supplies of coal are abundant, but its use has been constrained by environmental concerns. Many countries are pursuing clean-coal technology programs as a means of helping to resolve environmental concerns that could inhibit greater use of coal.

- Natural gas consumption has more than doubled since 1950. Gas resource potential is substantial, and progress has been made in promoting greater diversity of gas supplies, such as the 1986 agreement to proceed with the development of the Troll and Sleipner fields in the Norwegian sector of the North Sea. Progress has also been made in removing impediments to greater gas use and in better defining the natural gas resource base and potential new end-use markets for gas. Trade in gas has also been enhanced through expansion of markets for LNG, particularly in the Pacific, and removal of barriers to gas trade.

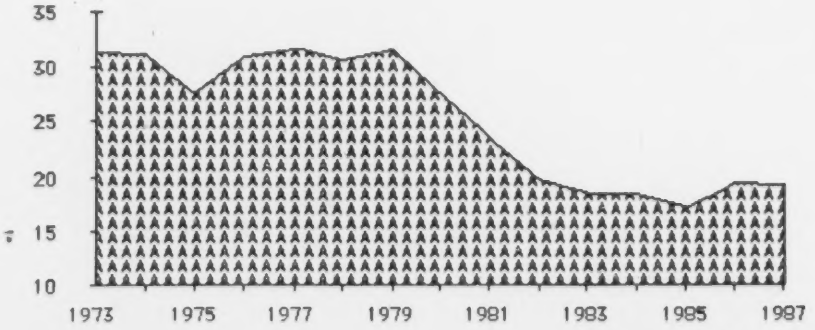
- Nuclear power has made significant contributions to the world's energy balance. By 1985, nuclear power accounted for 15 percent of all electrical generation in the world. The rates of market penetration of nuclear power generation have been the highest in those industrialized countries that lack significant domestic energy resources, such as France and Belgium, where nuclear power provides over 60 percent of all electricity production. Efforts are being made in the wake of the Chernobyl accident to maintain nuclear power as a safe and viable option through enhanced safety, resolution of waste disposal problems, and streamlining the siting and licensing of nuclear plants.

- Technologies for conserving and using energy more efficiently have reduced the need for oil and other primary fuels over the past decade, and have slowed the growth in energy consumption.

OIL PRICES INCREASED IN THE 1970'S . . .



. . . AND OPEC PRODUCTION DECLINED IN THE 1980'S



THE WORLD OIL MARKET HAS EVOLVED FROM SHORTAGE TO SURPLUS

- As a result of a long period of declining oil prices in the 1950's and 1960's, worldwide oil demand grew rapidly. Meanwhile, declining real oil prices discouraged exploration and development in the free world's largest oil producer — the United States. U.S. oil production peaked in 1970, contributing to a perception of an impending shortage of oil supplies.

- Consumers turned increasingly to countries that were members of the Organization of Petroleum Exporting Countries (OPEC) and, in particular, those OPEC countries located in the Middle East, to fulfill their growing oil demand. As OPEC countries increased their market share at the beginning of the 1970's, they were able to take greater control over their oil resources and to set the prices for their oil sales. Increasingly, OPEC oil was being sold by the producing country governments, rather than by the major oil companies.

- Oil supply disruptions in the 1970's precipitated a series of steep price increases, which tended to remain in effect long after the supply disruptions had been resolved. By the end of 1981, oil prices had risen to over $35 per barrel, compared to less than $3 in 1970.

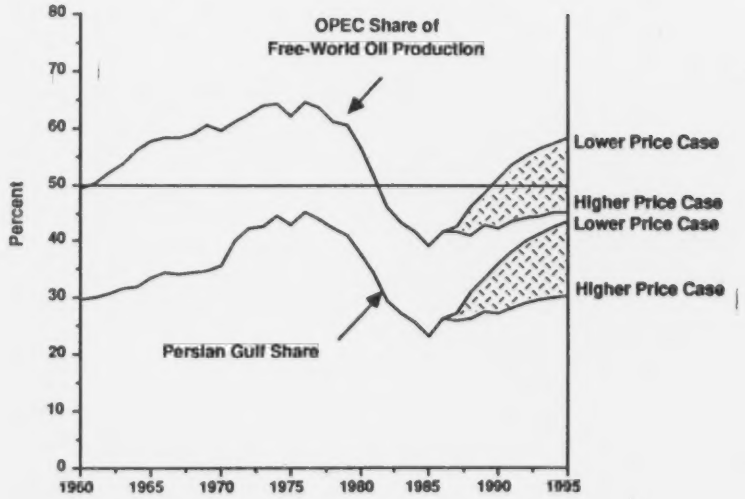
- These price increases spurred major efforts to use oil more efficiently, to develop high-cost oil reserves, and to switch from oil to other fuels. The decline in U.S. oil production was halted, and major new oil supplies came on stream in countries such as Angola, Brazil, China, Columbia, Egypt, India, Malaysia, Norway, Oman, and the United Kingdom. Non-OPEC oil production rose from about 21.7 million barrels per day in 1970, to its current rate of almost 27 million barrels per day. OPEC's oil output dropped from more than 31 million barrels per day in 1979 to about 17 million barrels per day in 1985.

- As OPEC's market share deteriorated, much of its production capacity had to be shut in for lack of buyers. Excess worldwide oil production capacity grew to about 10 million barrels per day by the mid-1980's, greatly complicating OPEC's efforts to maintain high oil prices.

- OPEC tried to regain most of the production cuts by agreeing to national production quotas in 1982. Saudi Arabia absorbed most of the production cuts in its role as OPEC's "swing producer," allowing its crude oil output to decline from about 10 million barrels per day in 1980 to less than 3 million barrels per day in the summer of 1985. Despite these production cuts, oil prices began to decline in 1981, falling to about $25 per barrel by 1985. Saudi Arabia abandoned its swing producer role in late 1985, and OPEC adopted a market-based pricing system in December. As a consequence, oil prices dropped to under $10 per barrel by the summer of 1986.

- OPEC restored official prices and production quotas in August 1986, and prices have remained in the range of $14 to $18 since then. So far, OPEC has been unable to regain much of its lost market share, and excess production capacity worldwide remains at about 9 to 10 million barrels per day (concentrated largely in the Middle East). Prices remain volatile, but the outlook over the next two years is for no substantial price increase.

THE WORLD IS BECOMING MORE DEPENDENT ON PERSIAN GULF AND OPEC SUPPLIERS



Source: Energy Security report.

THE WORLD ENERGY OUTLOOK POSES CONCERNS ABOUT FUTURE ENERGY SECURITY

- Lower oil prices will accelerate the decline in oil production from high-cost areas such as the United States. U.S. oil production declined by almost one million barrels per day over the course of 1986, due to the shut-in of marginal wells and a reduced level of exploration and development activity. Lower oil prices increased the number of stripper well abandonments in the United States to about 96,000 in 1986, compared to less than 10,000 in normal years.

- The number of active domestic drilling rigs declined to less than 700 in the summer of 1986, and has remained in the range of 900 to 1100 since then, compared to 2000 active rigs in 1985 and 4000 rigs in 1981. Even though U.S. production did not continue to decline during 1987, the low level of domestic drilling implies further production declines in the future as existing fields are depleted.

- Outside the United States, non-OPEC production has continued to increase despite the price collapse. Over the longer term, however, production is expected to decline in many non-OPEC countries, such as the United Kingdom and Canada, and in OPEC countries outside the Persian Gulf, such as Indonesia.

- At the same time, lower oil prices will encourage more consumption of petroleum products as a result of higher economic growth and reduced incentives for conservation and fuel switching. Despite lower prices, however, oil's share of total energy consumption worldwide is expected to decline from its current level of 46 percent to about 43 percent by 1995.

- Oil's share of consumption in the industrial, residential/commercial, and electricity sectors is expected to continue to decline, but oil will continue to provide over 90 percent of the fuel used in the transportation sector. As a result of growing populations and economies during the 1990's, free world oil consumption is projected to grow from about 49 million barrels per day in 1988 to as much as 53 million barrels per day in 1995.

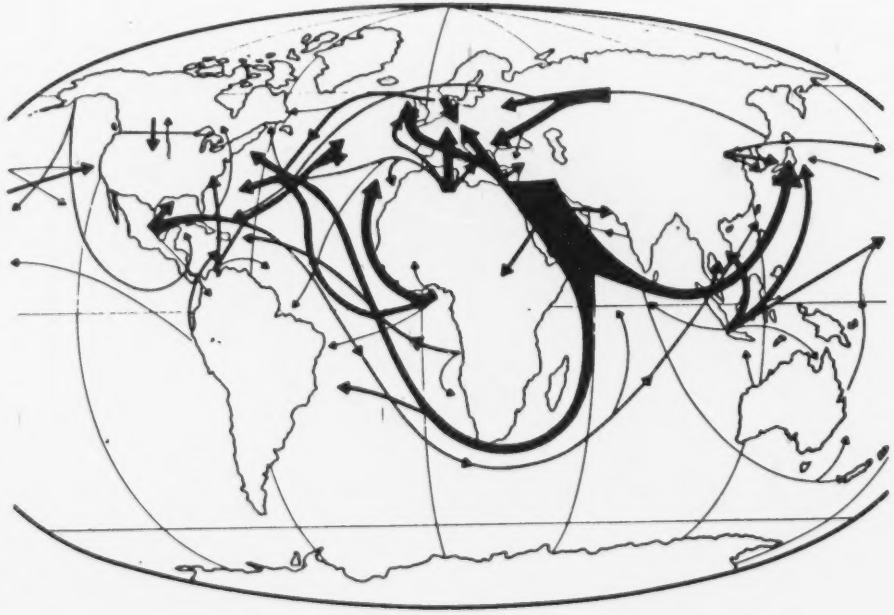
- Unless non-OPEC production can maintain the pace of growing consumption, the world will turn increasingly to OPEC for its oil supplies. In particular, the world will become more dependent on those countries with the largest reserves and lowest production costs — Saudi Arabia, Iran, Iraq, Kuwait, and the United Arab Emirates.

- According to recent DOE projections, the OPEC share of free world oil supplies will grow from around 40 percent now to between 45 and 60 percent by 1995. Persian Gulf countries will increase their market share from 25 percent today to between 30 and 45 percent by 1995.

- If adequate supplies of oil and other energy resources continue to be available at reasonable prices, this will contribute to higher economic growth. At the same time, the projected increase in reliance on relatively few oil suppliers implies certain risks for the United States and other consuming countries and a need to continue international efforts to diversify energy supplies and to remain prepared for possible oil disruptions.

AN INTERNATIONAL APPROACH TO ENERGY SECURITY

INTERNATIONAL CRUDE OIL FLOW, 1985



Arrows Indicate Origin and Destination
But Not Necessarily Specific Routes.

INTERCONNECTED WORLD ENERGY MARKETS REQUIRE A COORDINATED APPROACH

- One of the key lessons learned from the 1970's was that world energy markets are extremely interdependent. Individual nations cannot "go it alone;" they are inevitably affected by the decisions and reactions of all other major market participants, in both normal and abnormal times.

- It was the growing dependence of all countries on oil supplies from the Persian Gulf which reduced spare oil production capacity in the 1970's and contributed to the price shocks and economic losses resulting from oil supply disruptions. Similarly, the combined efforts of all countries to diversify away from oil, develop secure oil supplies, promote energy conservation, and increase strategic oil stocks have contributed to the current large margin of spare oil production capacity and enhanced capability to respond to disruptions.

- In 1987, the United States represented one-third of free world oil consumption and purchased about 10 percent of oil exported from the Persian Gulf. Therefore, while it is clear that continued efforts to reduce U.S. dependence will contribute to international energy security, similar efforts will be required in all regions to reduce collective vulnerability to potential disruptions and their economic costs. A barrel of oil or any other unit of energy that is saved, stocked, or produced anywhere in the world can contribute to this collective energy security.

- A great deal of progress toward greater energy security has been made in the last ten years, supported by the coordinated efforts of the International Energy Agency. Energy is being applied more efficiently, real economic growth has occurred without any significant increase in energy consumption and with an actual decline in oil use, non-OPEC production is up, and dependence of the world oil market on supplies from the Persian Gulf is lower than the peak levels of the late 1970's.

- However, with dependence on the Persian Gulf again on the rise due to the price declines of the last two years, and with that dependence expected to continue to continue to rise in the future, sustained international efforts are needed to ensure that the world economy does not again become overly dependent on insecure oil imports. Continued diversification of energy supplies, enhanced emergency preparedness, and reducing barriers that interfere with both are essential. The decline in oil prices — and its impact on oil consumption, on the development of secure energy supplies, and on the policies and programs of energy consuming countries — underscores the importance of sustained international coordination.

INTERNATIONAL ENERGY SECURITY STRATEGY

- **Promoting a diverse and flexible international energy supply system**
- **Removing barriers to the economic development of alternative energy supplies**
- **Improving international capability to respond to energy emergencies**

THE ADMINISTRATION IS PURSUING A THREE-PART INTERNATIONAL ENERGY SECURITY STRATEGY

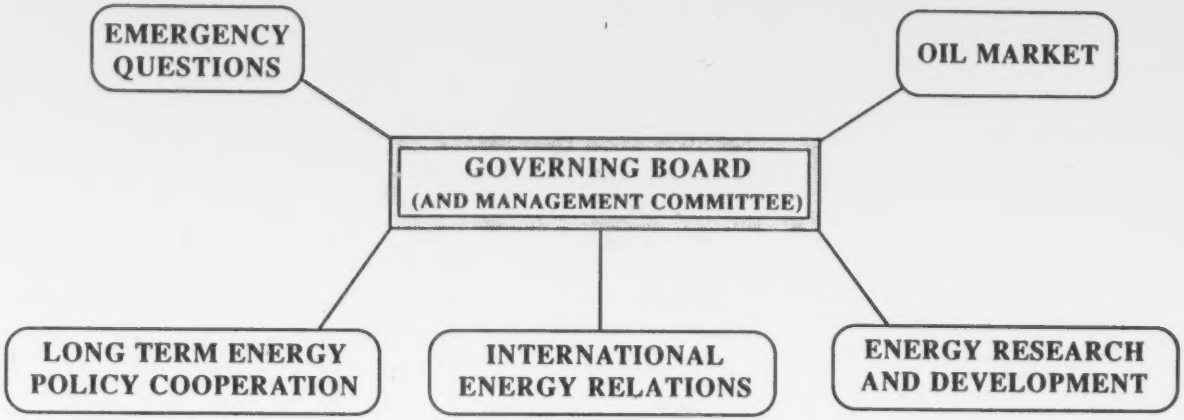
- The International energy security policy of the United States is aimed at enhancing international efforts to:
  - Reduce undue dependence of the international energy market on oil supplies from the Persian Gulf and enhance emergency preparedness to respond to potential future supply disruptions;
  - Promote the development of secure and economic energy supplies in all regions of the world;
  - Encourage complementary energy policies which rely to the maximum extent possible on market forces with a prudent consideration of security concerns.

- To further these objectives, the United States is pursuing a three-part strategy:
  - *Promoting a diverse and flexible international energy supply system.* There are a number of alternatives to imports from the Persian Gulf: the development of oil and gas in more secure regions; the greater and cleaner use of coal; maintaining nuclear power as a safe and viable option; continued efficiency improvements; and development of renewables and technologies to solve our long-term energy diversification needs. The U.S. strives both bilaterally and multilaterally to encourage policies and collaborative efforts that will promote these alternatives.
  - *Removing barriers to the economic development of alternative supplies.* Free and fair trade and investment make it possible for economical alternatives to insecure energy supplies to be developed and used. But for this market-oriented approach to work, trade restrictions, unfair production subsidies, and restrictions on foreign investment must be removed. As a result of international coordination, much progress has been made in removing such impediments; but more remains to be done. U.S. efforts, both bilaterally and in international fora, are aimed at seeking the removal of such restrictions.
  - *Improving the international capability to respond to energy emergencies.* The risks of oil supply disruptions and the potential costs of oil price shocks can be reduced by promoting cooperative international responses to oil disruptions and, ultimately, by promoting peace and stability in volatile supply regions like the Middle East. The U.S. encourages increases in strategic oil stocks and coordinated use of those stocks as the first line of defense in an oil disruption. The U.S. and others have increased their peace-keeping presence in the Persian Gulf to deter threats to civilian shipping and continue to promote efforts to resolve disputes and promote peace in the region.

- The U.S. pursues these strategies bilaterally and through international organizations. The International Energy Agency (IEA) is the principal international forum for energy cooperation among the industrialized countries.

THE IMPORTANT ROLE OF THE INTERNATIONAL ENERGY AGENCY IN ENHANCING ENERGY SECURITY

INTERNATIONAL ENERGY AGENCY COMMITTEE STRUCTURE



MEMBER COUNTRIES

NORTH AMERICA
- Canada
- United States

EUROPE
- Austria
- Belgium
- Denmark
- Germany
- Greece
- Ireland
- Italy
- Luxembourg
- The Netherlands
- Norway
- Portugal
- Spain
- Sweden
- Switzerland
- Turkey
- United Kingdom

PACIFIC REGION
- Australia
- Japan
- New Zealand

THE IEA IS DESIGNED TO ENHANCE ENERGY SECURITY

- The International Energy Agency (IEA), founded in 1974 at the initiation of the United States, is a forum for energy cooperation among twenty-one industrialized countries. The IEA is designed to reduce the economic risks of oil supply disruptions and to reduce dependence on oil through coordinated and cooperative efforts. The basic principles of the IEA as outlined in its founding charter, the *Agreement on an International Energy Program* (IEP) are to:

  — reduce dependence of member countries on imported oil through cooperative efforts to increase energy efficiency, develop secure alternative energy sources, and promote energy research, development and demonstration.
  — maintain a system for coping with oil supply disruptions.
  — operate an information system on oil and other energy markets.
  — encourage cooperative relations with other oil consuming and producing countries.

- In 1976 and 1977 IEA countries adopted a *Long-Term Cooperation Program and Twelve Principles for Energy Policy*, designed to guide member countries in planning and implementing their energy policies. Annual reviews of members' energy policies assist in determining consistency with these IEA principles including: reducing oil imports by supply expansion, oil substitution and conservation; expanding the availability of coal, natural gas and nuclear energy; encouraging energy conservation and efficiency; establishing a favorable investment climate to develop energy resources; emphasizing research and development of alternative sources; and reducing conflicts between environmental concerns and energy requirements.

- The IEA has further developed its programs and policies and has been flexible in adapting them to changing market conditions. The IEA has responded to various developments — from oil disruptions, to natural gas security issues, to the impact of lower oil prices on IEA energy markets. Notable decisions by the IEA in the 1980's include:

  — In May 1983, IEA Ministers committed to limit the dependence of IEA countries on single sources of natural gas outside the OECD, such as Soviet gas, and to develop means to cope with any potential disruption of natural gas imports.
  — In July 1984, the IEA Governing Board agreed to encourage higher levels of oil stocks and their early coordinated use in disruptions.
  — In July 1985, IEA Ministers agreed to remove barriers to the importation of refined petroleum products.
  — In May 1987, IEA Ministers examined the impact of lower oil prices and the Chernobyl incident on IEA energy markets and agreed on the need to remove remaining trade barriers to energy development, implement flexible energy production and investment regimes, and take advantage of lower oil prices to increase strategic oil stocks.

- The IEA's main policy body is the Governing Board, composed of senior energy officials from member countries, and meeting occasionally at Ministerial level. The Governing Board is assisted by the IEA Secretariat and various standing groups and special committees: the Standing Group on Long-Term Cooperation, the Committee on Energy Research and Development, the Standing Group on Emergency Questions, the Standing Group on the Oil Market, and an ad hoc group on International Energy Relations with other producing and consuming countries.

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IEA PROMOTES COORDINATION OF NATIONAL ENERGY PROGRAMS

- Elimination of price controls
- Diversification of natural gas supplies
- Promotion of conservation programs
- Recognition of need for new coal and nuclear electrical plants
- Reduction of trade barriers

THE IEA PROMOTES COORDINATION OF NATIONAL ENERGY PROGRAMS

- The principles adopted by IEA ministers constitute the guideposts for annual reviews of the energy policies and programs of each member country carried out by the IEA's Standing Group on Long-Term Cooperation (SLT). These reviews are published annually and include an assessment of developments in each member country and recommendations for ways in which energy policies can be strengthened or improved.

- The IEA review process seeks to ensure that the energy policies and programs of member countries take account of the principles and objectives of the IEA. The reviews are conducted by officials of other IEA countries, supported by the IEA staff. For instance, in 1987, the United States led the review of Spain; while Norway had lead responsibility for the review of the United States.

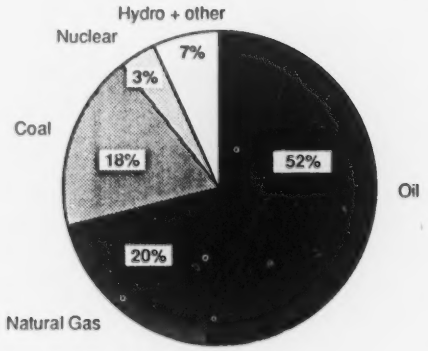
- The review process serves several important functions: enhancing mutual understanding among members of each other's energy situation and programs; providing constructive critiques and support for measures to improve the energy security of member countries; and helping to build a consensus within the country that such measures are necessary. Past reviews have contributed to significant changes in member countries energy policies including:

  — eliminating price controls on oil and oil products and encouraging use of long-term replacement cost in determining gas and electricity prices.
  — diversifying natural gas supplies, especially the successful marketing of gas from Norway's Troll Field.
  — promoting more effective conservation programs that maximize the effectiveness of government expenditures in a period of budget stringency.
  — recognizing the need to continue planning and construction of coal and nuclear electrical power plants, in view of the need for additional generation capacity requirements in the 1990's.
  — reducing barriers to trade in energy and in energy-related goods, services and technology in order to encourage the full economic potential of IEA energy production.

- The United States was instrumental in encouraging the IEA to institute a series of program reviews focusing on the emergency response capabilities of member countries. The second of these reviews, conducted under the auspices of the Standing Group on Emergency Questions (SEQ), has recently been concluded. The objective of the first cycle was to determine if member countries had established adequate programs and organizations to cope with an oil supply disruption. The second cycle was intended to examine changes in policies, programs and authorities pertinent to early coordinated use of stocks. The IEA is evaluating the results of these emergency reviews.

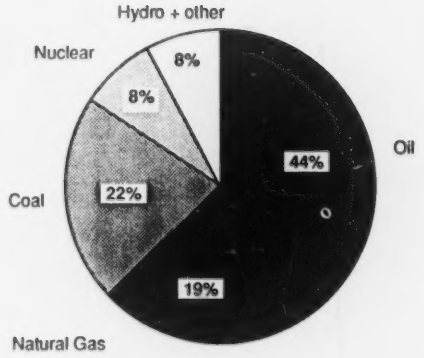
IEA TOTAL FUEL CONSUMPTION HAS SHIFTED FROM OIL TO NUCLEAR AND COAL

1979



155 Quadrillion BTU's

1987



155 Quadrillion BTU's

THE IEA ENCOURAGES DIVERSIFICATION OF ENERGY SUPPLIES

- *The IEA seeks to reduce the dependence of IEA member countries of imported oil from insecure regions* by promoting greater efficiency in energy use and expanded use of coal, nuclear power, natural gas, hydroelectric power, and renewable sources of energy, like solar and wind power. Concrete progress has been made toward diversification of IEA energy supplies and reduced oil dependence.

- *Oil consumption in IEA countries has declined* by nearly 5 million barrels per day since 1973, while oil's share of energy requirements has fallen from 53 percent to 43 percent. During the same period, the use of nuclear power, coal, natural gas and other energy sources increased dramatically.

- *Natural gas has made progress as a substitute for imported oil* in many IEA countries, and development of secure indigenous supplies has been successfully encouraged. In 1983, IEA Ministers, recognizing the potential energy security risks of expanded dependence by Western Europe on Soviet gas, committed IEA countries to limit their reliance on a single source of natural gas supply outside the OECD. Since then, development of both the Troll and Sleipner gas fields in the Norwegian sector of the North Sea has begun, and supplies are expected to begin reaching Western European markets in the early 1990's. The Canadian natural gas market has been deregulated, restrictions on gas use have been removed in the U.S., and progress continues on the development of new gas supplies in Australia and on LNG imports into Japan.

- *IEA countries as a whole are virtually self-sufficient in the production and use of coal.* The consumption of coal in the IEA has increased steadily since 1973, and plentiful reserves and an improved trade infrastructure ensure that coal can continue to be a secure energy source far into the future. Coal's progress has been encouraged by the IEA: in 1979, IEA Ministers adopted Principles of IEA Action on Coal, calling for greater coal use, production and trade. In 1985 and 1987, Ministers sought to further expand coal use by calling for reductions in barriers to trade. The IEA also is promoting cooperation on the development of new technologies for the clean use of coal.

- *Nuclear power use has increased sixfold in IEA countries since 1973.* IEA Ministers have agreed on the need for continued action to carry out waste disposal, streamline licensing procedures, maintain safety, ensure that regulatory practices do not constrain investment in nuclear plants, and reinforce the reliability of international trade in nuclear fuels and technology under appropriate safeguards. Continued implementation of these principles is particularly important in the wake of uncertainties raised by the Chernobyl accident. In 1987, IEA Ministers reaffirmed the need to pursue all energy options: a number of countries such as Canada, Germany, Japan, the United Kingdom and the United States reaffirmed their commitment to the nuclear power option.

- *Energy conservation has made a major contribution* to containing IEA oil imports. The decline in energy-intensity in IEA countries since 1973 has reduced IEA consumption (below the level that would have been reached if prior trends had continued) by the oil equivalent of the total annual oil production of IEA countries. The IEA's conservation program strives to eliminate wasteful practices and create a more energy efficient economic structure. IEA work on conservation includes regular exchanges of experience between Member countries and continuing evaluation of national conservation programs.

THE IEA SUPPORTS REMOVAL OF BARRIERS TO FREE TRADE AND INVESTMENT IN ENERGY

Progress is being made by IEA countries in:

Coal: Reducing subsidies for uneconomic supplies

Oil: Reducing barriers to refined product imports

Resource Development: Eliminating price controls that discourage oil and gas development

Investment: Liberalizing foreign investment policies

THE IEA SUPPORTS REMOVAL OF BARRIERS TO FREE TRADE AND INVESTMENT IN ENERGY

- Removing restrictions on energy investment and trade (with the exception of controls on nuclear proliferation and other safety concerns) plays an essential role in improving energy security and reducing costs by ensuring that the most economic energy sources are developed and used. IEA countries have made important progress in reducing these barriers and have pledged to strive to eliminate remaining barriers and to resist pressures to introduce new restrictions.

- In 1983, IEA Ministers urged the development of a flexible and diversified coal trading system; stressed the importance of encouraging stable trade in nuclear equipment, fuel cycle services and nuclear fuel; and agreed that trade barriers that could delay development of indigenous gas resources should be removed.

- In 1985, IEA Ministers expanded their commitment to petroleum products and called for "a common approach whereby imported refined oil products can go to markets of different IEA countries on the basis of supply and demand as determined by market forces without distortions."

- In 1987, IEA Ministers called for energy policies which promote free and open trade in energy. Specifically, Ministers agreed to:

  — address regulations which restrict trade, create imbalanced royalty or fiscal regimes (including both those for oil and for competitive fuels such as coal or gas), and inhibit hydrocarbon investments.
  — resist new protectionist measures on energy imports, such as import fees and other trade-distorting measures.
  — reduce, with a view to eliminating, remaining trade barriers, including subsidies or other government controls which impede trade.

- Substantial progress has been made by IEA countries in addressing and reducing barriers to trade and investment:

  — *In coal*, the IEA's most recent coal review will, at the request of the United States and Australia, address the cost of existing measures to protect uneconomic coal production in such IEA countries as the United Kingdom, Germany and Japan. Belgium has made progress in recent years in rationalizing domestic coal production, and Japan has taken steps to gradually reduce uneconomic domestic coal output.
  — *In oil product trade*, Japan has made progress since the 1985 Ministerial meeting in opening its market to imported oil products, especially gasoline.
  — *In oil and gas development*, a number of IEA countries have eliminated oil price and allocation controls which discouraged development of indigenous resources. And progress has also been made in liberalizing restrictive tax and fiscal regimes which inhibited oil and gas resource development.
  — In *energy investment*, barriers to foreign investment have been reduced. Canada has liberalized its investment review procedures and the restrictive investment policies of its National Energy Program and Foreign Investment Review Agency.

THE IEA SPONSORS COOPERATION IN ENERGY RESEARCH AND DEVELOPMENT

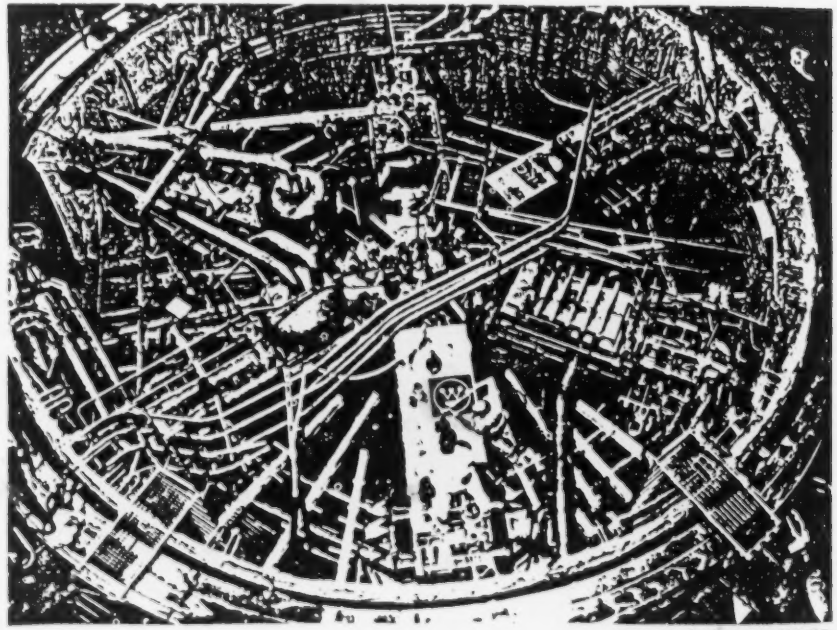


Photo credit: Oak Ridge National Laboratory

The International Fusion Superconducting Magnet Test Facility at Oak Ridge National Laboratory, constructed under IEA auspices.

THE IEA SPONSORS COOPERATION IN ENERGY RESEARCH AND DEVELOPMENT

- The IEA's efforts to reduce the long-term dependence of member countries on imported oil include energy research, development and technology demonstration (RD&D). The IEA promotes RD&D by carrying out annual reviews of national energy programs, by sponsoring state-of-the-art reviews of promising energy technologies, and by promoting collaborative projects between two or more member countries.

- Enhanced RD&D collaboration, based on the concept of early consultation and joint program planning, was endorsed by IEA Ministers in 1985 and again in 1987. The objectives are to:

  — Maintain technological progress during periods of declining energy R&D budgets.
  — Improve overall effectiveness of RD&D process.
  — Avoid unnecessary duplication of major facilities.
  — Improve collaboration between government and industry in energy R&D.

  Priority areas that have been identified by the Ministers are: clean use of coal; advanced techniques for resource development; end use efficiency; renewable technologies; and diversification of transportation fuels.

- IEA RD&D projects may be cost-shared, task-shared (each participant contributes results of a certain component of its program), or information exchange. There have been 45 IEA RD&D agreements over the past 11 years. Some noteworthy achievements of the IEA program include:

  — the Grimethorpe Pressurized Fluidized Bed Combustion Project, a recently completed 8-year research project with costs shared among Germany, the United States and the United Kingdom.
  — the Small Solar Power System, a nine-country cooperative project to produce electricity from solar energy in Spain.
  — the Large Coil Project, simultaneously demonstrating the performance of six fusion oriented superconducting magnets from three countries and the European Community.
  — studies of ways to enhance oil and gas recovery from existing wells, a cooperative effort among seven IEA countries.

- The IEA has also established an energy technology data exchange and a number of valuable information centers dealing with specialized technology areas including coal technology, heat pumps, air infiltration, biomass, and end-use technologies.

THE IEA IS A UNIQUE SOURCE OF ENERGY INFORMATION

THE IEA INFORMATION SYSTEM MONITORS DEVELOPMENTS IN WORLD ENERGY MARKETS

- The IEP Agreement called for the establishment by the IEA of an information system on the international oil market and other sources of energy. The IEA has developed a sophisticated computerized energy information system and is a forerunner in the international standardization, collection and presentation of energy supply and demand balances and assessments of all energy fuels.

- The IEA collects energy data from its member countries and from other sources, prepares and publishes statistical reports, market assessments and energy forecasts to keep IEA member countries and the general public informed on a timely basis of developments in energy markets. This helps member countries respond promptly and effectively to changing conditions in the energy market.

- The IEA staff, under the direction of the Standing Group on the Oil Market, analyzes developments in the international oil market and prepares current oil market assessments published in the monthly IEA Oil Market Report and in the Annual Oil Market Report. These assessments cover current and future trends in world oil production, oil imports and exports, oil stock levels, oil consumption, and oil prices. Other issues routinely assessed include exploration and production trends, refinery developments, oil investment and financial patterns, and international oil trade patterns.

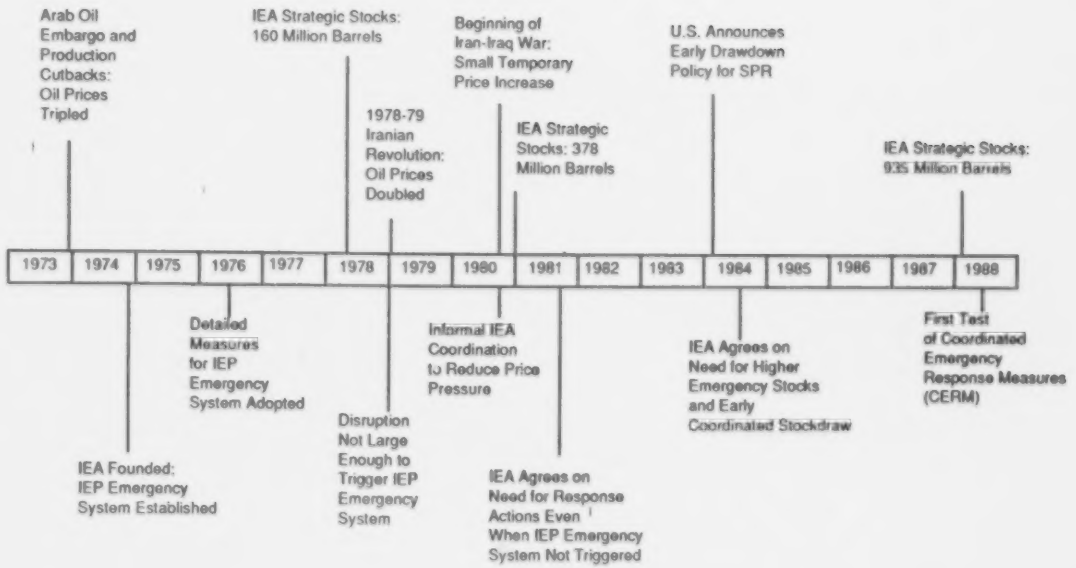
- The IEA assembles, compiles, and publishes annual, quarterly, and monthly statistical reports on gas, coal, and overall energy supply, consumption, prices and taxes. The IEA's statistical efforts are not limited to IEA countries; the IEA has made a major contribution by designing and compiling energy balances for developing countries.

- The IEA also carries out major assessments of key energy issues. Examples are studies on the world gas market, the electricity industry, fuel efficiency in passenger cars, refinery developments and the expansion of coal use and trade.

- In addition to the IEA's general information system, the IEP Agreement called for the establishment of a special information system to ensure efficient operation of emergency measures. This system, operating under the direction of the Standing Group on Emergency Questions, is supported on a continuous basis by member countries. Included in this system is information on indigenous production, imports, exports, and oil stock levels. When activated, this emergency information system would provide monthly information from oil companies and member countries.

- The IEA's information system and assessments have been invaluable in increasing the transparency of international energy markets and in clarifying important developments and issues. They have provided a better framework for energy policy development and debate.

THE IEA HAS DEVELOPED SYSTEMS FOR RESPONDING TO ENERGY EMERGENCIES


Arab Oil Embargo and Production Cutbacks: Oil Prices Tripled
IEA Strategic Stocks: 160 Million Barrels
Beginning of Iran-Iraq War: Small Temporary Price Increase
U.S. Announces Early Drawdown Policy for SPR
1978-79 Iranian Revolution: Oil Prices Doubled
IEA Strategic Stocks: 378 Million Barrels
IEA Strategic Stocks: 935 Million Barrels
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
IEA Founded: IEP Emergency System Established
Detailed Measures for IEP Emergency System Adopted
Disruption Not Large Enough to Trigger IEP Emergency System
Informal IEA Coordination to Reduce Price Pressure
IEA Agrees on Need for Response Actions Even When IEP Emergency System Not Triggered
IEA Agrees on Need for Higher Emergency Stocks and Early Coordinated Stockdraw
First Test of Coordinated Emergency Response Measures (CERM)

THE IEA ENHANCES COLLECTIVE RESPONSES TO ENERGY EMERGENCIES

- Because of the interdependent nature of the world oil market, U.S. energy security is inseparable from that of our allies and trading partners. Even if supply was disrupted in a producing country that did not export oil to the United States, the oil market would redirect some supplies of nondisrupted oil that might have come to the United States to countries whose oil supplies were cut back. Furthermore, oil price increases, regardless of their cause, affect consumers in all countries.

- Cooperation with the IEA to reduce oil imports reduces collective vulnerability to oil disruptions; and the development of strong emergency response measures in IEA countries strengthens the coordinated response to disruptions in supply, reducing the costs and magnifying the benefits of our emergency response efforts.

- In the event of emergencies, the IEA has on hand the Emergency System, established under the 1974 Agreement on an International Energy Program (IEP). In the event of activation of the System, the agreement commits IEA countries to reduce oil demand and to share available oil supplies according to an established formula. Participation in the IEP Emergency System requires member countries to maintain:

  — emergency oil stocks equivalent to 90 days of net oil imports in the prior calendar year.
  — the ability to reduce consumption of oil by 10 percent, or, as an alternative, readiness to draw down oil stocks in excess of the 90-day commitment.
  — legal authorities to participate in the System by both the U.S. government and U.S. private companies.

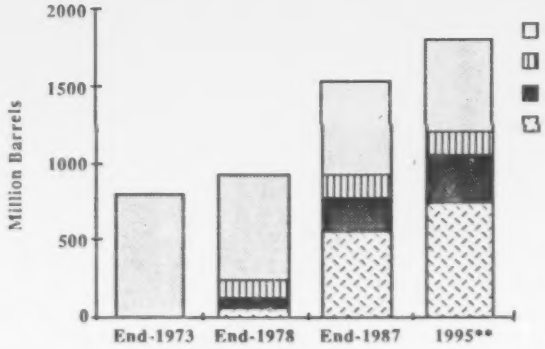
- The U.S. Government stands firmly behind all of our commitments to the IEP. The Administration has urged, however, that alternative measures, particularly coordinated use of strategic oil stocks, should be utilized first as long as practicable in a major oil disruption. Through the IEA, the U.S. has promoted reliance on strategic oil stocks as the first line of defense in an oil supply disruption, and much has been accomplished. The strategic oil stocks of IEA countries are much higher than in the 1970's and the IEA has agreed to a program to draw on stocks in a coordinated manner in the event of a disruption.

- The energy security of IEA countries has improved considerably since the 1970's: dependence on the Persian Gulf is lower, there is substantial excess oil production capacity outside the Gulf, fuel-switching capability away from oil has increased, and strategic oil stocks have risen. The programs and policies adopted by IEA countries in the IEP have made a significant contribution to this improvement.

- But in view of future increases in oil imports from the Persian Gulf, there is a need for continued cooperative efforts by IEA countries. The U.S. must be willing to stand by all of our IEP commitments if we are to remain an effective voice in the IEA and to continue to seek improvements in IEA emergency preparedness policies.

OECD EMERGENCY RESPONSE CAPABILITIES ARE IMPROVING

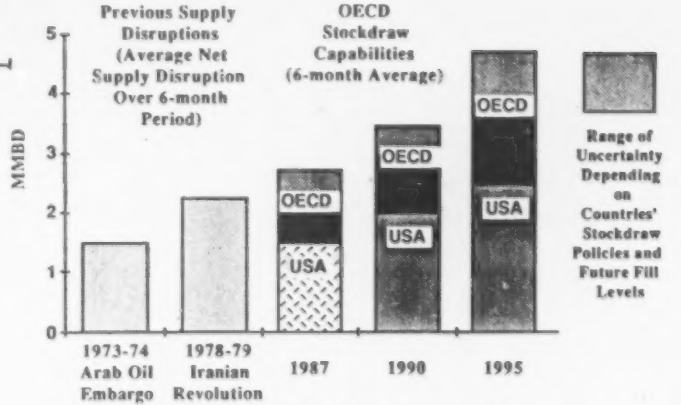
STOCK LEVELS



* Private stocks in excess of operational requirements but required by government regulations.

** Assumes SPR fill of 750 million barrels by 1995, completion of other countries' announced programs to increase stocks, and no change in mandatory company holdings.

STOCKDRAW ABILITY



Note: These estimates are intended to illustrate the amount of stockdraw that could be reasonably expected tin a lengthy supply distruption; maxim .m stockdraw capabilities are significantly higher.

HIGHER LEVELS OF OIL STOCKS AND STOCK COORDINATION ARE IEA PRIORITIES

- The importance of maintaining oil stocks for use in the event of oil disruptions has been a critical element of the IEA since its foundation in 1974. The IEP Agreement initially required IEA member countries to hold oil stocks equivalent to 60 days of net oil imports in the prior calendar year; this requirement was subsequently raised to 90 days. Increased attention by IEA countries to the benefits of high levels of oil stocks and their coordinated use in an emergency emerged in the response to the Iran-Iraq war, when drawdowns in relatively ample levels of oil stocks helped mitigate the effects of oil production cutbacks.

- The 1984 IEA Governing Board decision on Stocks and Supply Disruptions formally recognized the value of stockdraws in disruptions, identified the need for coordination among IEA nations to maximize the value of such drawdowns, and called for IEA procedures for stock coordination. The IEA encouraged member governments to build stocks beyond their legal IEP obligation: at the May 1987 IEA Ministerial Meeting, IEA Ministers reaffirmed their commitment to maintain adequate levels of stocks and, where possible, to increase them to permit more flexible responses to future oil supply disruptions.

- The IEA has therefore been instrumental in helping support U.S. efforts to seek increases in strategic oil stocks in other industrialized countries, the coordinated use of those stocks in the event of disruptions, and recognition that reliance on strategic oil stocks is a crucial step toward greater emergency preparedness. The efforts of the U.S. and the IEA have accomplished a great deal:

  - Government-controlled or -owned strategic oil stocks in IEA countries now amount to over 935 million barrels, compared to 3 million barrels in 1973 and 160 million in 1978.
  - These oil stocks could be drawn down at a rate of 3 to 5 million barrels per day during an oil disruption lasting six months.
  - Japan has accelerated its strategic stock program; Germany is shifting stocks from commercial to government control; the Netherlands has increased government-controlled stocks; Norway has created a permanent emergency oil reserve and the U.S. is urging other countries to follow suit.
  - All of the major IEA countries are in compliance with their 90-day commitment.

- The IEA is finalizing procedures to coordinate use of those stocks if necessary during an emergency. These procedures, known as Coordinated Emergency Response Measures (CERM), have been provisionally adopted by the IEA. The IEA has just completed the first test of the CERM procedures and is currently evaluating the results. The preliminary conclusion is that the test was very successful in meeting its objectives.

- Efforts by other IEA countries to build up their oil stocks and to be able and prepared to draw on them when necessary are an indispensable complement to the U.S. strategic oil reserve program. IEA oil stock coordination policies help increase the economic benefits of using stocks, while ensuring that the burden of building and maintaining those stocks is shared.

RENEWAL OF EPCA AUTHORITIES IS CRUCIAL TO U.S. PARTICIPATION IN KEY IEA PROGRAMS

EPCA TITLE II AUTHORITIES ARE ESSENTIAL TO U.S. IEP OBLIGATIONS

- **SECTION 252 — Limited antitrust and breach of contract protections for U.S. oil companies to:**
  - **participate in voluntary IEA allocation**
  - **provide data to IEA**
  - **attend IEA meetings**

- **SECTION 251 — Authority for mandatory oil allocation, if necessary, to supplement voluntary company actions**

- **SECTION 254 — Authority for the executive branch to provide oil industry data to the IEA as required by the IEP**

EPCA TITLE II AUTHORITIES ARE ESSENTIAL TO U.S. IEP OBLIGATIONS

- Title II of the EPCA provides authorities that are essential for the U.S. Government and cooperating U.S. oil companies to meet two principal U.S. obligations under the IEP: participating in international allocation of oil in the event that the IEA's Emergency Sharing System is activated, and making available information necessary for monitoring of world oil markets and for ensuring efficient operation of the emergency system:

  — the IEP and IEA Governing Board Decisions obligate member countries to have adequate legal authorities to fulfill these obligations.
  — termination of these authorities would be viewed by the other IEA member countries as a failure to honor U.S. commitments to the IEP Agreement.

- Section 252 of the EPCA is the most important of these authorities. The IEA emergency system is designed to rely heavily on the voluntary assistance of private companies. The IEP and IEA Governing Board decisions require member countries to ensure that oil companies make available information essential to the operation of the IEA's emergency system and provide for the emergency sharing of oil supplies, largely through voluntary oil company actions. Section 252 makes U.S. oil company participation possible by:

  — providing limited antitrust and breach of contract defenses permitting companies to participate in voluntary supply actions and to provide information that may be confidential or proprietary; and
  — during non-emergency periods, allowing participation at IEA meetings on the IEP allocation and information provisions and in tests of the IEA emergency data and sharing systems.

- Legal defenses are contingent upon the oil companies' compliance with Section 252 procedural safeguards embodied in "Voluntary Agreement and Plan of Action to Implement the International Energy Program", agreed to in 1976 by a number of U.S. oil companies and approved the U.S. Government. The Attorney General and Secretary of Energy recently approved a "Second Plan of Action" describing industry actions to implement international emergency oil sharing and specifying the recordkeeping, reporting and antitrust monitoring requirements.

- Seventeen U.S. oil companies, including both major international oil companies and independent oil companies, are participants in the Voluntary Agreement and potentially in the Second Plan of Action. The Department of Energy, the Department of Justice, and the Federal Trade Commission monitor closely industry participation in the IEP, and reports to Congress have consistently concluded that industry activity under the Voluntary Agreement has had no anti-competitive effects.

- EPCA Title II contains two other significant provisions required to fulfill U.S. obligations under the IEP. Section 251 provides authority for mandatory international oil allocation that the IEA requires each member country have available as a last resort in the event that voluntary emergency sharing fails to achieve its goals. Section 254 provides authority for the Executive Branch to provide to the IEA, as necessary, information and data related to the oil industry.

EPCA TITLE II AUTHORITIES SHOULD BE EXTENDED FOR FIVE YEARS

Extension would demonstrate strong commitment to IEA to:

- **IEA partners**
- **OPEC countries**
- **U.S. oil companies**

EPCA TITLE II AUTHORITIES SHOULD BE EXTENDED FOR FIVE YEARS TO DEMONSTRATE STRONG COMMITMENT TO THE IEA

- Section 252 legal defenses originally were made effective until June 30, 1979, and subsequently have been extended eleven times by Congress. Throughout this period, the Executive Branch repeatedly has made clear that defenses are essential to oil companies' participation and that the IEA, in turn, can function effectively only with participation by U.S. and foreign oil companies. The companies are essential sources of information about conditions in the international oil market and would be primary actors in redistributing oil if the IEP's emergency provisions were activated.

- EPCA Title II authorities should be extended to June 30, 1993, to reaffirm to our IEA allies, as well as to OPEC, our strong commitment to the IEA and to IEA programs to respond to oil disruptions, to accelerate development of alternative energy supplies, to increase energy efficiency, and to strengthen emergency preparedness. A five-year extension is also desirable to reaffirm to participating U.S. oil companies the U.S. Government's strong commitment to the IEP. If section 252 were permitted to expire, U.S. oil companies would be compelled to suspend their participation in the IEA, and this would cast doubt on the Government's seriousness of purpose in encouraging their involvement.

- Efforts are under way to prepare the sixth test of the IEA's emergency allocation system, "AST-6," scheduled for October-November 1988. A timely renewal of the EPCA authorities would allow U.S. companies to participate in planning for the test and to make the required resource commitments. It would also allow preparatory efforts by governments and industry, already underway over the last eight months, to continue.

- We solicit the support of the Congress for timely action on legislation to extend these essential EPCA authorities, to permit the planning and conduct of the test to proceed, and to sustain confidence by other IEA countries that the U.S. views its IEP commitments seriously.

INTERNATIONAL ENERGY SECURITY ISSUES FOR THE FUTURE: THE CONTINUED ROLE OF THE IEA

THE IEA CAN HELP MEET THE ENERGY CHALLENGES OF THE FUTURE

- IEA member countries have diversified their energy supplies, improved energy-use efficiency, and are much less vulnerable to oil supply disruptions than they were in the 1970's. But, with dependence on the Persian Gulf on the rise and considering the possibility that world dependence on Persian Gulf oil by the mid-1990's could approach 50 percent, there is no room for complacency.

- To contain the expected rise in insecure oil imports, there is a continuing need for energy conservation and energy diversification. To guard against future oil disruptions, there is a need for continuing efforts to improve emergency preparedness.

- Much progress has been made to enhance energy security, but more remains to be done.

- *Energy efficiency improvements must be maintained.* Today, the United States and other IEA countries use about the same amount of energy as they did in 1973, while their economies have expanded by over 25 percent. However, the potential for energy conservation has by no means been exhausted. For instance, in the U.S. alone, DOE estimates indicate that 5-12 million barrels per day of oil equivalent could be saved annually by the year 2000 if existing cost-effective technologies and those expected from future R & D are applied fully to improve energy efficiency. International cooperation, such as that provided through the IEA, can help maintain the momentum for cost-effective energy-savings by:

  — evaluating the effectiveness of the conservation policies of member countries;
  — providing for the cost-effective sharing of information on energy efficiency technologies and programs;
  — conducting comparative studies of technological, structural and institutional factors that effect energy consumption and demand in member countries; and
  — helping to identify the most effective role governments can play in inducing energy efficiency improvements.

- *Energy emergency preparedness must be maintained.* Emergency preparedness has been considerably strengthened today: higher levels of strategic oil stocks, stock coordination policies, excess oil production capacity that could be brought on stream, and fuel switching capacity all would allow IEA countries to respond to an oil disruption without the severe economic costs incurred in the 1970's. But there is a continuing need to ensure that IEA countries remain prepared to meet possible future scenarios. This can be accomplished through the programs of the IEA designed to:

  — encourage higher levels of oil stocks;
  — finalize coordinated stockdraw procedures;
  — rapidly assess any changes in energy market situations and bring potential problems to the attention of IEA members; and
  — improve decision-making procedures and coordinated policy implementation in the event of energy emergencies.

- *Remaining barriers to energy trade and investment must be addressed.* Considerable progress has been made in reducing barriers to energy trade and investment. But obstacles remain which could impede the economic development and trade of energy resources. The IEA is addressing a number of important issues:

  — remaining restrictions on energy imports and exports;
  — remaining impediments to greater coal trade;
  — energy resource leasing and fiscal policies which might impede economic development of indigenous resources; and
  — the relationship between energy and environmental concerns.

- *Continued cooperation in energy research and development is crucial, particularly during periods of budget stringency.* Cooperation through the IEA can help maintain technological progress during periods of declining energy R & D budgets; improve the overall effectiveness of the R & D process; avoid unnecessary duplication of major facilities; and improve collaboration between government and industry in energy R & D. Through the IEA, the U.S. has initiated a series of workshops to facilitate the joint planning process and identify areas of mutually beneficial collaboration. Priority areas being pursued or planned include:

  — clean use of coal;
  — advanced techniques for resource development;
  — energy technology information sytems;
  — end-use efficiency; and
  — diversification of transportation fuels.

- The international cooperation available through the IEA is important in all of these areas if we are to maximize our collective experience, expertise and resources to confront the energy security challenges of the future.

DESCRIPTION OF THE IEA EMERGENCY SHARING SYSTEM

In the event of major supply disruptions, the IEA has on hand the Emergency Sharing System, which was established by the 1974 Agreement on an International Energy Program (IEP). Participation in the IEP Emergency Sharing System requires member countries to:

- maintain emergency oil stocks equivalent to 90 days of net oil imports in the prior calendar year;
- maintain the ability to reduce consumption of oil by 10 percent, or, as an alternative, readiness to draw down oil stocks in excess of the 90-day commitment; and
- have legal authorities to participate in the Emergency Sharing System for both the government and private companies.

In the event of activation of the Emergency Sharing System, the IEP Agreement commits IEA countries to share available oil supplies according to an established formula. The Emergency Sharing System has been further developed through decisions of the IEA Governing Board, which are codified in an IEA-classified document known as the "Emergency Management Manual."

To ensure efficient operation of the Emergency Sharing System, the IEP also established an emergency information system. Included in this system is information on indigenous production, imports, exports, and oil stock levels. When activated, this emergency information system would provide monthly information from the oil industry and member countries. The emergency information system can be initiated prior to activation of the Emergency Sharing System.

The Sharing Formula

The Emergency Sharing System can be activated for the IEA as a whole (the "general trigger") or for an individual IEA country (the "selective trigger"), but only to respond to an oil supply disruption which will leave the entire IEA or the individual member at least 7 percent short of the amount of oil it had been consuming.

In a general trigger situation, the emergency sharing formula establishes national "supply rights" (based on historical consumption levels less calculated requirements for demand restraint and/or stock draw) and attributes "allocation obligations" and "allocation rights" to the IEA countries for each monthly cycle of the allocation system, depending on whether their "available" oil supplies exceed or fall short of their supply rights. A country having an allocation obligation is required to supply the quantity of oil equal to the excess over its supply right to other IEA countries having allocation rights.

The only available supplies that are counted for this purpose are indigenous production and net imports; consequently, the sharing formula does not create any disincentive to the building of domestic stocks prior to activation of the sharing system.

In the case of a general trigger, a country's supply right is equal to its final oil consumption during the base period, minus a demand restraint obligation (7 percent of base period consumption, if the shortfall is between 7 percent and 12 percent, and 10 percent of consumption, for shortfalls of 12 percent or greater), and minus a share of the remaining shortfall (based on the country's Emergency Reserve Drawdown Obligation, "ERDO", which reflects the country's share of IEA net oil imports in the previous calendar year). This is displayed pictorially in the illustration on the next page. Thus, generally speaking, *all IEA countries share proportionately, based on consumption, up to 10 percent of the oil supply shortfall. However, all of the supply shortfall above 10 percent is borne in proportion to the IEA countries' extent of import-dependency, thereby favoring countries with indigenous oil production.*

Whether an individual country has an allocation right or an allocation obligation in any particular emergency involving a general trigger therefore depends on: (1) the size of the oil supply disruption; (2) the size of the country's available oil supplies (which will be influenced by the manner in which the market distributes the effects of the disruption and a country's response to the disruption — for example, stockdraw and/or demand restraint could result in the backing out of a country's imports, thereby reducing or eliminating an allocation obligation, or possibly even creating an allocation right); and (3) the degree of its

historical import-dependence in relation to the import-dependency of the other IEA countries.

In the case of a selective trigger, the affected country is required to restrain demand by 7 percent and has a supply right equal to the difference between its available supplies and its oil consumption during the base period less 7 percent. The other IEA countries share the obligation to provide oil to that country, in proportion to their respective oil consumption levels during the base period.

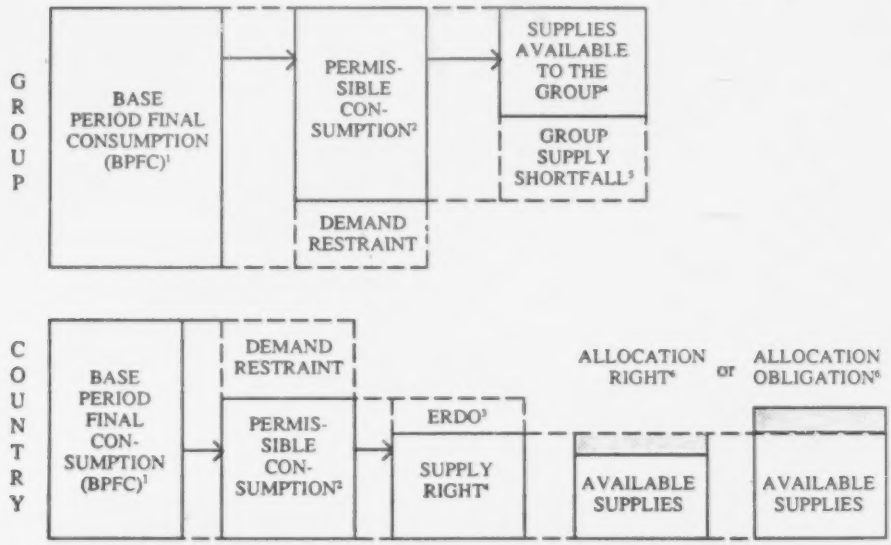
Activation of the System

The IEP invests the IEA's Executive Director with responsibility for making a finding whether a 7 percent oil supply shortfall exists or is impending. This shortfall is measured against "base period final consumption", ordinarily for the most recent four quarters with a one quarter lag (to allow for the collection of data). While a 7 percent shortfall is a necessary condition for activation, the Secretariat's decision whether to make the trigger finding would be based in part on a judgment as to whether the disruption is likely to cause serious economic damage.

A complex system of weighted voting then comes into play. The table on the next page shows the IEA voting weights, which involve a combination of equally weighted "general" votes and "oil consumption" votes weighted according to the countries' historical oil consumption.

If the Executive Director makes a positive general trigger finding applicable to the IEA as a whole,

ILLUSTRATION OF ARTICLE 7 OF THE IEP AGREEMENT



[1] Base Period Final Consumption (BPFC): Consumption during previous four quarters lagged by one quarter.
[2] Permissible Consumption: BPFC minus 7 percent or 10 percent, assumed to be achieved through demand restraint (or, alternatively, drawdown of excess emergency reserves).
[3] Emergency Reserve Drawdown Obligation (ERDO): Proportionate share of shortage based on country's reliance on imports, assumed to be achieved by drawing down emergency reserves.
[4] The sum of countries' supply rights equals supplies available to the group.
[5] The sum of ERDOs equals the group supply shortfall.
[6] For the group, the sum of allocation rights and obligations is zero.

the Emergency Sharing System would be activated, subject only to a *contrary* vote by a "special majority" of 45 "general" votes plus 60 percent of the "combined" votes. If the Executive Director makes a positive "selective" trigger finding, applicable to one or more individual IEA countries, the Emergency Sharing System would be activated, subject only to a *contrary* vote by a "special majority" of 51 "general" votes plus 60 percent of the "combined" votes.

However, if the Executive Director declines to make a general or selective trigger finding, any country may request him or her to do so. If the Executive Director continues to decline to make the finding, the requesting country is entitled to a vote of the Governing Board on whether to activate. In this case a vote *to trigger* the Emergency Sharing System requires a "majority" vote (60 percent of the "combined" and 50 percent of the "general" votes cast), which effectively means that in this case *the major oil consuming countries, and preeminently the United States, would decide whether to activate the Emergency System.*

IEA VOTING WEIGHTS

When the majority or special majority is required, the Participating Countries shall have the following voting weights:

	General voting weight	Oil Consumption voting weight	Combined voting weight
Australia	3	1	4
Austria	3	1	4
Belgium	3	2	5
Canada	3	5	8
Denmark	3	1	4
Germany	3	8	11
Greece	3	1	4
Ireland	3	0	3
Italy	3	5	8
Japan	3	15	18
Luxembourg	3	0	3
The Netherlands	3	2	5
New Zealand	3	0	3
Portugal	3	0	3
Spain	3	2	5
Sweden	3	2	5
Switzerland	3	1	4
Turkey	3	1	4
United Kingdom	3	6	9
United States	3	47	50
Totals	60	100	160

System Operation

Under the Emergency Sharing System, the oil industry would redistribute among the member countries, in accordance with the sharing formula, a portion of the oil supplies remaining available to them after a disruption. Oil supplies would be redirected *through a system of "voluntary offers"* from the oil industry to ensure that the total of oil production and oil imports received by each country is in accordance with its supply right. Such transactions would take place *at prevailing market prices, negotiated by buyer and seller.*

The operation of the system is intended to supplement the redistribution of oil that would take place in any event in response to the emergency. Redirection of oil under the IEA system would account for only a small fraction of the oil in the market, although the amount could be considerable. It is expected that most of the oil to be redirected would be cargos on the high seas.

Each IEA member country's government is responsible for assuring that country's compliance with the Emergency Sharing System and for effecting through its companies, as necessary, the diversion of oil available to it that is in excess of the amount allowed under the prescribed formula.

A critical role in operating the system is performed by the Industry Supply Advisory Group ("ISAG"), consisting of supply, logistics and maritime experts from participating oil companies, who will serve full-time at the IEA's offices in Paris when the Emergency Sharing System is activated. The ISAG will assist the IEA Secretariat by analyzing oil supply data and voluntary offers to supply or acquire oil, and providing advice to the IEA on how to most efficiently redistribute oil so as to bring the IEA countries into conformity with their supply rights.

Each member government is required to have available the authority to mandate international oil allocation, but this is only a last resort in the event that the voluntary sharing system fails to achieve its goals.

A detailed description of the operation of the Emergency System can be found in the "Second Plan of Action to Implement the International Energy Program," published at 52 *Fed. Reg.* 31704 (August 21, 1987).

Senator BUMPERS. Mr. Ambassador.

STATEMENT OF JOHN P. FERRITER, DEPUTY ASSISTANT SECRETARY OF STATE FOR INTERNATIONAL ENERGY AND RESOURCES POLICY

Mr. FERRITER. Thank you, Mr. Chairman. I also have a statement which I will submit for the record and provide a brief summary.

The structure of the global oil industry has changed substantially since the signing of the agreement on the International Energy Program in 1974. Today's global market has become more economically efficient, with more companies involved and greater transparency and speed in the flow of information on oil market data and conditions.

One consequence is increased market sensitivity to supply disturbances. Oil production, consumption, and trade patterns have also changed significantly. The level of U.S. oil imports declined through 1985 to 27 percent of consumption.

The decline in oil prices from 1981 on has benefited American consumers and the economy as a whole, together with the economies of other oil importing nations. There are encouraging trends regarding energy security over the longer term.

Global exploration efforts remain bouyant. The economic prosperity of major oil exporting countries is becoming increasingly linked to that of importing countries, thus making any future oil embargo an economically costly proposition for them.

Pipeline capacity is expanding in the Persian Gulf area, improving the resiliency of oil export infrastructure. And the U.S. continues to build the strategic petroleum reserve, and member countries of the International Energy Agency have also built strategic oil stockpiles.

However, lower oil prices also have negative consequences, both for our energy producing regions and industries and for our energy security. Declining domestic production and rising demand have pushed up U.S. oil imports in the last two years, and the outlook is for more of the same.

According to some projections, global dependence on Persian gulf oil supplies could reach 50 percent of total demand within ten years.

The past year demonstraded the continued potential for political or even technical developments to disrupt the market to varying degrees. Therefore, energy emergency preparedness remaines essential, and international cooperation is a key component.

The International Energy Program and the International Energy Agency remain the focal point for our approach to international energy security. The IEA, as Secretary Martin has pointed out, has undergone substantial evolution over the past decade, although its fundamental purpose remains the same.

Under the International Energy Program, all member countries commit themselves to work together to meet the common threat and equitably share the burden of a significant oil supply disruption by restraining demand for oil and utilizing oil stockpiles, sharing the oil supplies available on the world market, and exchanging detailed oil market information and data during a crisis.

This collective IEA approach to energy security enhances our foreign policy flexibility and our ability to pursue key national security objectives in the event of a supply disruption.

In 1984, the IEA governing board reached a landmark decision on the use of stocks. The members agreed that early drawdown of emergency stocks in an oil supply disruption and other mutually supportive action to restore the supply and demand balance are vital elements in restoring lost oil supplies.

We are convinced that adequate oil stocks, combined with a cooperative and rapid approach to their use in a crisis are the most efficient way to protect western economies against future supply disruptions.

Senator BUMPERS. Mr. Ambassador, I am going to have to interrupt you. We have a roll call vote. How much longer is your statement?

Mr. FERRITER. One minute.

Senator BUNPERS. Let me make this suggestion—well, go ahead and finish your statement.

Mr. FERRITER. Well, I will cut it back considerably.

We have in the IEA tested a new mechanism which we feel is an important contribution to the energy security. The agency provides an important and readily available forum for consultations on longer term considerations. And as chairman of the SLT, I can assure you that we in that body are making substantial progress to enhance our collective energy security.

The continuing ability and commitment of the U.S. and U.S. companies to participate in a sharing system represents a very important political commitment to a multilateral approach to any future supply crises. EPCA is essential to our efforts.

A failure to extend EPCA title II would undermine confidence in the commitment of the United States to international cooperation.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Ferriter follows:]

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STATEMENT OF John P. Ferriter
DEPUTY ASSISTANT SECRETARY OF STATE
FOR INTERNATIONAL ENERGY AND RESOURCES POLICY
BEFORE THE
COMMITTEE ON ENERGY AND NATURAL RESOURCES
UNITES STATES SENATE

MAY 12, 1988

Revised
5/12/88

Thank you very much, Mr. Chairman.

Title I of the Energy Policy and Conservation Act (EPCA) created the Strategic Petroleum Reserve. Title II provides the basis for U.S. participation in the 21-member International Energy Agency. Together these EPCA provisions are vital to U.S. energy security and to our ability to effectively participate in coordinated international efforts under the International Energy Program to respond to an energy emergency. The Administration strongly favors extension of EPCA Title II through June 30, 1993.

THE WORLD ENERGY SITUATION IS CHANGING . . .

The global oil market has undergone a major evolution since the signing of the Agreement on an International Energy Program in November, 1974, and the setting up of the International Energy Agency in the following year. In those days, global oil trade was dominated by major multinational oil companies -- The Seven Sisters -- who controlled a significant proportion of total world oil movements. Most oil was traded on the basis of long-term contracts, and the major oil producing countries had little say over production and pricing decisions.

The structure of the global oil industry has changed substantially since 1974. The role of oil majors has declined as national oil companies in the major oil producing countries have assumed increasing control over crude oil production, transportation and sales. There has been an increase in the total number of companies involved in the international oil business, including small refiners, marketers and traders. Large volumes of oil are now traded on the spot market, or under short term contracts with pricing provisions that allow for rapid price adjustments. In the last few years futures and forward trading have taken on an increasingly significant role. Improvements in global data processing and telecommunications capabilities have resulted in greater market transparency, allowing oil companies to streamline their operations. As a result of these changes, the current market is far more efficient than in the past and will adjust far more quickly to supply and demand conditions through the price mechanism.

Oil production, consumption and trade patterns have also changed significantly. In 1974 the U.S. imported 35% of its oil requirements, with only 5% of its needs coming from the Persian Gulf. Largely as a result of domestic price controls, U.S. oil consumption continued to rise throughout the seventies and import dependence rose to a peak of 47% in 1977.

The lagged impact of the 1973-74 oil price shock, the second shock of 1978-79, and the decontrol of domestic crude oil prices combined to reverse these trends, and the level of U.S. oil imports declined through 1985, when imports composed only 27% of our consumption. Declining global demand and rising output from a diverse group of non-OPEC producers put downward pressure on oil prices from 1981 onwards. These market pressures culminated in the sharp drop in oil prices from a high of nearly forty dollars a barrel to less than nine dollars in the summer of 1986. Even reductions in OPEC production from 32 million barrels a day in 1979 to less than 17 in 1985 could not prevent the market collapse.

The decline in oil prices has benefitted American consumers, and the economy as a whole, together with the economies of other oil importing nations. Inflation levels are lower, disposable incomes up, and economic growth stronger than would have been the case with higher oil prices. The foundations for energy security also remain strong, and the U.S. is now capable of withstanding a supply interruption comparable to the 1973 and 1979 disruptions without the same economic distress.

But lower oil prices also have negative consequences, both for our energy producing regions and industries in the short run, and possibly for our energy security over the long term. Long term market forecasting is a highly uncertain business, and this is especially true in the oil business where the "experts" have more often been wrong than right. For example, experts in the late 70's were projecting oil prices in excess of $100 by 1988. Nonetheless, prudence dictates and national security requires that we do our best to project future trends, especially in critical areas like energy supply availability, and to factor these projections into evolving policies and programs.

Long term projections on the energy market are contained in the Department of Energy's excellent report, Energy Security, which was released a year ago. That study points out the geological "facts of life" regarding the outlook for major new oil discoveries in the U.S. and concludes that the prospect for a significant increase in production of oil in the U.S. is not great, and that the best chances for new reserves are in the Arctic National Wildlife Refuge and the Offshore Continental Shelf areas.

On the demand side, continued economic growth, combined with a period of lower oil prices, could be expected to lead to increased petroleum consumption in the U.S. and elsewhere. Yet the latest data shows that despite a strong economy and lower oil prices, oil consumption in the U.S. rose by 1% in 1987. For the OECD group of countries, oil demand was up by 1.7% last year.

Declining domestic production and rising demand increased U.S. oil imports in the last two years, and the outlook is for more of the same. Projections in DOE's Energy Security report suggest that, if oil prices remain relatively low and demand grows, U.S. oil imports could rise to 8 to 10 MMBD by 1995, or about 50 percent of total U.S. projected oil consumption in that year.

Other problems affecting our energy security may also lie ahead. Foremost among these are concerns regarding coal use, and its impact on the environment, and the economics and safety of nuclear power. Problems we face in the U.S. are not dissimilar from those in other major oil importing countries, although in some cases the problems elsewhere are more serious.

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Another clear trend is the increasing importance of oil output from the Persian Gulf, both for the U.S. and our partners in the International Energy Agency. This trend derives from another inescapable geologic fact: two-thirds of the world's proven petroleum reserves are located in the Persian Gulf region, and most of this oil can be produced profitably at prices below $10 per barrel. In the last two years, producers in the Persian Gulf region (Saudi Arabia, Iraq, Iran, Kuwait, Qatar, UAE) have increased their share of free world oil production from 23% to 27%, despite the hostilities in the region. According to some projections, global dependence on Persian Gulf oil supplies could exceed 40 percent of total demand within ten years.

Although problems lie ahead, there are also more encouraging trends that lead to optimism regarding energy security over the longer term:

-- The economic prosperity of major oil exporting countries is becoming increasingly linked to that of importing countries through investment, trade and financial flows, thus making any future oil embargo an economically costly proposition.

-- Many major oil exporting countries will have continuing major cash flow requirements, so that attempts embargoes or disruptions will be counterproductive for them.

-- Extensive new pipeline capacity has been installed in the Persian Gulf area, thereby allowing substantial exports that do not transit the Straits of Hormuz.

-- There is currently about 9 to 10 million barrels per day of excess productive capacity worldwide, and this situation could continue for a number of years.

-- Non-OPEC production continues to increase, while exploration activity in the U.S. has begun to recover from its mid-1986 low point, which should help assure a continuing diversity of oil supplies.

-- Economic growth has been delinked from its lockstep relationship with growth in energy consumption; conservation and energy efficient technologies continue to improve the energy performance of the world's major economies.

-- The U.S. and other nations have underway major research, development and demonstration programs to bring on stream new clean coal technologies that should assist the continued expansion of coal use in power generators and industry over the longer term.

-- Substantial sums are being devoted both here and abroad in research on inherently safe nuclear reactors, which may help reduce public concerns regarding nuclear safety.

-- The U.S. continues to build the Strategic Petroleum Reserve, which, when it reaches its target level of 750 million barrels, will be able to release up to 4.5 MMBD of crude oil to offset lost supplies. When combined with the strategy of market reliance, the impacts of any conceivable disruption would be greatly mitigated.

-- Member countries of the IEA have also built strategic oil stockpiles, and are prepared to cooperate with us in countering any future supply disruption.

There are reasons for optimism compared to the situation in the late 1970's. A major turnaround has been achieved but action on several fronts is still needed. The Administration's

domestic energy policy agenda is clear: greater access to Federal lands for oil and gas production in an environmentally acceptable manner, repeal of the Windfall Profits Tax to increase incentives for domestic exploration and production, complete natural gas decontrol and nuclear regulatory reform, full funding for the clean coal program, build-up of the SPR to the 750 million barrel level, and above all, continued emphasis on market reliance, not government subsidies and regulation. The international agenda is equally important.

. . . BUT INTERNATIONAL COOPERATION REMAINS ESSENTIAL

The past year has shown the continued potential for political or even technical developments to disrupt the market to varying degrees, although market prices have continued to be moderate. We are in the eighth year of a brutal war between Iran and Iraq who between them hold 24 percent of the world's oil reserves. The war also threatens neighboring countries where another 45 percent of the Free World's oil reserves are located. Yet it is equally important to understand that this war has little if any influence over the basic declining trend in oil prices.

The threats are not the same as in 1973 or 1979, and they are unlikely to be the same next year as they are now. It is sufficient to have a major flow of oil to Western markets disrupted or even threatened by disruption to precipitate a market reaction that could have a heavy economic and welfare cost for energy consumers. International oil supply is more resilient due to surplus capacity, alternative pipeline routes, the proliferation of new-to-market producers, and the chronic need for revenues on the part of major oil producers. The market is also much more efficient, and one consequence is that the price mechanism is more responsive to disruptions or threats of disruption.

We are convinced that market reliance coupled with strategic oil stocks and a cooperative and rapid approach to their use in the event of a major crisis are the most efficient way to protect Western economies. Their availability and expeditious use in such a situation would have a significant calming effect on markets, forestall panic buying and thereby dampen price spikes. Rapid and coordinated utilization of strategic oil stocks is a cornerstone of our energy emergency preparedness.

The International Energy Program, and the institution it creates, the International Energy Agency, remain a key part of our approach to international energy security. Like the global oil market, the IEA has undergone substantial evolution over the past decade, although its fundamental purpose remains. Under the International Energy Program, all member countries commit themselves to equitably share the burden of a significant oil supply disruption, both by restraining demand for oil or utilizing oil stockpiles, or both. Member states are also committed to exchanging detailed oil market information and data during a crisis and to sharing on an equitable basis the impact of a significant disruption in world oil supplies.

The fundamental value of the cooperative approach to an oil crisis is that it: reduces the risk that any one IEA member country will feel threatened by an embargo targetted at it, reduces the incentives for individual countries to seek special bilateral arrangements with oil suppliers, sometimes at great costs to their--and our--foreign policy objectives, and reduces the prospect that individual IEA countries will bid against each other to obtain oil supplies, thereby contributing to upward price pressures generated by the crisis. While the prospect of oil disruptions and boycotts like those of the

seventies is remote today, oil market conditions could be substantially different in the future. The IEA is the best existing mechanism for developing a coordinated, cooperative response. The collective energy security that results from our participation in the IEA enhances our foreign policy flexibility and our ability to pursue key national security objectives in the event of a supply disruption.

The IEA, like the international oil market, is a dynamic, evolving institution. Experience during the short-lived supply disruptions in 1978-79 caused by the Iranian Revolution demonstrated that even a small disruption can be serious, particularly if there are allocation and price controls, little surplus world oil production capacity, and low strategic oil stockpiles. Companies and countries with low stocks during a disruption of uncertain duration were prone to build-up stocks as a precautionary measure, thereby exacerbating the supply-demand imbalance.

The experience gained in prior interruptions served as the basis for an agreement by IEA Ministers in 1981 that member countries should be prepared to prevent future relatively minor supply disruptions from resulting in sharply higher prices and severe economic damage, primarily through the operation of market forces, but supplemented as necessary by other measures. Under the Ministers' agreement, these measures could include discouragement of hoarding and abnormal spot market purchases, lowered consumption, short-term fuel switching, and other informal efforts to contain the effects of supply imbalances.

Further analysis and discussions over the subsequent years coincided with the continuing build-up of the U.S. Strategic Petroleum Reserve, and increasing understanding that the SPR in combination with a market reliance strategy could be used effectively to offset supply disruptions. Other IEA countries were also building strategic stockpiles.

On July 11, 1984, the IEA Governing Board reached a landmark decision on the use of stocks. The Members agreed that the early drawdown of emergency stocks in the case of an oil supply disruption, and other mutually supportive actions tc

restore the supply and demand balance, are vital elements in restoring lost oil supplies. They also recognized the importance of coordinating their individual stock drawdown effort and the value of avoiding actions which might limit their effectiveness.

Since that 1984 decision, much work has been done in the IEA Standing Group on Emergency Questions to flesh out the procedures and programs under which member countries would undertake a coordinated stock drawdown. Some member countries prefer to utilize measures to restrain oil demand as their contribution to a coordinated effort to counter a supply disruption. The Administration views demand restraint programs as ineffective. Some IEA countries have substantial direct control over their major oil companies, and thus are better able to restrict supply. This method is also inefficient and not as effective compared to market reliance and strategic stockdraw.

Other major oil importing countries have built, and plan to use, their government-owned stocks, just as we plan to use our SPR. Japan now holds 160 million barrels of government-owned oil stocks, or about fifty days of import coverage, and has

announced plans to increase the level to 314 million barrels. This level compares more favorably to that of the U.S. commitment and we have urged the Japanese to meet this target. West Germany has, over the past year, taken steps to increase its government-owned stocks by an amount equal to ten days of import coverage, and some smaller European countries like The Netherlands and Norway are increasing their government stocks. These increases are on top of mandated company-owned stocks, which remain substantial.

Earlier this year, the IEA conducted its first simulation of the new oil crisis management approach created in 1984. The test of the Coordinated Emergency Response Measures (CERM) was a useful training exercise with regard to both domestic and international procedures. It afforded us an opportunity to gain further experience in the operation of U.S. energy emergency procedures, including our management and decision making structure. The CERM provides us with an important new tool in our arsenal of measures to enhance our nation's energy security. It provides a structure whereby we can coordinate the utilization of our SPR with the actions of other major

oil-importing nations. Such coordination will assure that efforts by our IEA partners to deal with a supply disruption reinforce--rather than counteract--our efforts to offset lost supplies and restore calm to international markets.

The sharing system itself has been substantially improved in recent years, primarily as a result of the introduction of improved communications and data processing capability. As a consequence, the sharing system will now place much more emphasis on oil company transactions that have been directly worked out between private companies, but in accord with the overall sharing objectives as determined by the IEA Secretariat under the International Energy Program. The IEP states that the price for oil transactions under the sharing system will be at conditions prevailing for comparable commercial transactions. As a consequence, prices negotiated between supplying and receiving companies will reflect market conditions, including spot market transactions.

Thus, the basic goals of sharing will be met, but primarily as a result of direct negotiations between buying and selling companies, subject to the approval of the IEA's Allocation Coordinator. These new, more market-oriented procedures are

reflected in the new U.S. Plan of Action governing U.S. oil company participation in the emergency sharing system, which is authorized under Section 252(f) of EPCA, and which has recently been approved by the Secretary of Energy, Attorney General and the Federal Trade Commission. The new procedures will be simulated this fall in the IEA's sixth Allocation Systems Test. Under the new Plan of Action, industry participants must retain and provide detailed information about their inter-company communications pertaining to the emergency. This information will enable Justice and FTC to monitor U.S. oil company participation to ensure that their IEA-related activities do not adversely affect competition.

In addition to mechanisms for coping with a supply emergency the Agency provides an important and readily available forum for consultations on longer term considerations. The Agency is playing an important role in the identification and reduction of barriers to the operation of market forces in the international energy sector, as well as promoting the development of economic indigenous IEA energy resources, the safe use of coal and nuclear power, conservation and international collaboration in energy research and

development. It also provides a forum for dealing with basic energy security issues. In May of 1983, for example, IEA Ministers addressed new concerns over natural gas security by agreeing to avoid undue dependence on any one source of gas imports, and to obtain future gas supplies from secure sources, with emphasis on indigenous OECD sources.

EPCA AUTHORITIES ARE CRITICAL

Although IEA planning and emergency policies and programs have undergone continuing evolution, the Emergency System embodied in the International Energy Program remains a basic component to which member countries attach great importance given the interdependent nature of world energy markets. U.S. ability to meet its commitments under that program is based on the authorities contained in Title II of EPCA. Moreover, the continuing ability and commitment of the U.S. and U.S. companies to participate in the sharing system represents a very important political commitment to the other members of the IEA. This political commitment to a multilateral approach to any future supply crisis is a cornerstone of U.S. energy policy and essential for our participation in the IEA.

Oil company involvement in IEA data gathering and emergency preparedness programs is important since oil companies alone have the market and technical expertise required to assure that oil sharing is efficiently and fairly implemented. The system was designed to ensure the voluntary cooperation and advice of the companies, which conduct the bulk of international oil trade to make the allocation system work. In fact, all the work of the IEA relies on a data base largely supplied by companies directly or through their national authorities.

From October through November of this year, the IEA will run its sixth test of the allocation system (AST-6). Three years have passed since the last AST in 1985. The purpose of the test is to provide training for government officials and companies in the mechanics and procedures of these systems should they be required in the event of a real supply disruption. The timely extension of EPCA authorities will permit orderly planning for, and conduct of, this important training excercise.

I would conclude, Mr. Chairman, by observing that the United States has significantly strengthened its emergency preparedness during this Administration. We continue to work both domestically and in cooperation with our IEA partners to further enhance our energy security, with respect to emergency preparedness and to longer-term development of secure sources of energy supply at reasonable costs.

EPCA authority is essential to our efforts. It provides specific legislative authority for company participation in relevant programs and tangible evidence that the U.S. remains committed to cooperating with our allies and trading partners in safeguarding our mutual energy security. This commitment to cooperation reassures our IEA partners that they will not have to go it alone in any future oil boycott or supply disruption.

A failure to extend EPCA Title II would undermine confidence in our commitment to cooperation, both at home and in IEA capitals. In the short run, and under current market conditions, this inability to particpate in a key IEA endeavor could be seen as signaling that energy security was no longer a

problem, thus encouraging complacency. Worse yet, it could signal that the U.S. intends to go it alone. In the longer term, should oil markets tighten as expected, we could see a renewed impulse to competitive bilateralism, with major oil importing countries seeking special political and economic ties to oil exporters at the expense of broader multilateral goals. Continued U.S. participation in a strong, effective International Energy Agency is the best way of avoiding this problem.

This concludes my prepared testimony. I will be happy to answer any questions.

Senator BUMPERS. Mr. Ambassador, Secretary Martin, I have about half a dozen questions which could be handled rather expeditiously. And rather than having you sitting around here, because we may have about three successive votes here, which would take 45 minutes to an hour, rather than having you sitting here cooling your heels during that time, we will just adjourn the hearing and I will submit these questions to you in writing.

They deal mostly, the questions deal mostly, with what are our average stocks, how do you define average stocks, are private stocks included as well as strategic petroleum reserves, who is falling down, and how are we going to discipline those? I mean, it's not going to work unless everybody cooperates to build their stocks.

And questions of that nature. They are not terribly complicated, but we will get those off to you today or tomorrow, and we would appreciate an expeditious response.

I thank you very much for coming. I regret that I can't sit here and jawbone with you about this for a while. But as I say, I can see we're going to get tied up over there.

Thank you very much.

[Whereupon, at 2:17 p.m., the hearing was adjourned.]

APPENDIX

RESPONSES TO ADDITIONAL COMMITTEE QUESTIONS

J. BENNETT JOHNSTON, LOUISIANA, CHAIRMAN
DALE BUMPERS, ARKANSAS
WENDELL H. FORD, KENTUCKY
HOWARD M. METZENBAUM, OHIO
JOHN MELCHER, MONTANA
BILL BRADLEY, NEW JERSEY
JEFF BINGAMAN, NEW MEXICO
TIMOTHY E. WIRTH, COLORADO
WYCHE FOWLER, JR., GEORGIA
KENT CONRAD, NORTH DAKOTA
JAMES A. McCLURE, IDAHO
MARK O. HATFIELD, OREGON
LOWELL P. WEICKER, JR., CONNECTICUT
PETE V. DOMENICI, NEW MEXICO
MALCOLM WALLOP, WYOMING
FRANK H. MURKOWSKI, ALASKA
DON NICKLES, OKLAHOMA
CHIC HECHT, NEVADA
DANIEL J. EVANS, WASHINGTON
DARYL H. OWEN, STAFF DIRECTOR
D. MICHAEL HARVEY, CHIEF COUNSEL
FRANK M. CUSHING, STAFF DIRECTOR FOR THE MINORITY
GARY G. ELLSWORTH, CHIEF COUNSEL FOR THE MINORITY

United States Senate
COMMITTEE ON
ENERGY AND NATURAL RESOURCES
WASHINGTON, DC 20510-6150

May 16, 1988

The Honorable William F. Martin
Deputy Secretary
United States Department of Energy
1000 Independence Ave., S.W.
Washington, D.C. 20585

Dear Mr. Secretary:

Enclosed are questions submitted by Members of the Committee on Energy and Natural Resources for the Committee's May 12 hearing record on S. 2203.

The Committee will expect to receive your responses by the close of business on Tuesday, May 24.

If you have any questions, please contact Betsy Moler, Senior Counsel, at 224-0612, or Jim Bruce, Senior Counsel, at 224-5052.

Sincerely,

J. Bennett Johnston
Chairman

JBJ/bmw

QUESTIONS BY SEN. BUMPERS FOR S. 2203 HEARING RECORD

Oil Stocks

1. You have alluded to procedures being finalized by the IEA to coordinate use of emergency oil stocks during an emergency. Could you please describe how the procedure -- which you call the "Coordinated Emergency Response Measures" or CERM -- would actually work?

2. Sec. Martin mentioned the IEA requirement that member nations maintain 90 days of emergency oil stocks. Mr. Ferriter says on page 14 of his statement that Japan has about 50 days of import coverage. Does this mean that Japan is not meeting its IEA stock requirement?

Which of the IEA member nations are now meeting the 90 day stock requirement? Are private stocks considered as meeting the requirement? Please provide for the record a list of IEA member nations, their current stocks, and the number of days of import coverage represented by those stocks.

IEA Activities

3. As your testimony indicates, IEA is quite active even in the absence of a major oil shortage. I understand that oil companies and nations working in the IEA as a forum have in the past resolved regional or national oil shortages that threatened to escalate into a situation that might trigger the IEA oil sharing plan. Could you give us any specific examples of such IEA intervention -- I understand that an oil supply problem several years ago in Turkey is one example.

Energy Conservation

4. If there is any one message that emerges from your testimony it is that increasing energy efficiency is about the only way the major industrialized nations can limit their dependence on Persian Gulf oil, especially for the transportation sector. The "geological facts of life" as Mr. Ferriter put it, are quite ominous. Yet on page 16 of Sec. Martin's statement there is a chart called "International Energy Security Strategy" and it does not list energy conservation or energy efficiency at all. Of the noteworthy IEA RD&D projects described on page 29, none relate to energy efficiency. Yet on page 25, Sec. Martin says, that energy conservation has since 1973 reduced IEA energy consumption by the oil equivalent of the total annual oil production of IEA countries. What is the average energy consumption per day of the IEA countries? What was it in 1973? Why isn't energy conservation a part of the IEA energy security strategy?

Has the U.S. sought to promote it as part of that strategy? Please be specific.

Oil Supply Disruption

5. Please provide a detailed explanation of what our government's contingency plans are for addressing a disruption in Persian Gulf crude

oil supply.

The Administration seems to take comfort in the smaller reliance on Persian Gulf oil of our country as compared to that of our allies. If a major disruption in Persian Gulf oil did occur, wouldn't the force majeure clauses in most oil contracts affect our supply as well?

Wouldn't the increase in the price of oil affect us as well?

Voluntary Agreement

6. A second plan of action describing which actions by oil companies will be covered by the antitrust and breach of contract defenses has been approved, is that correct? Please provide a copy of that plan for the Committee's records.

There are 17 oil companies that are IEA Reporting Companies. Have any oil companies refused to participate? Who? Why?

QUESTIONS FROM MINORITY MEMBERS
S. 2203 EXTENSION OF I.E.A.
MAY 12, 1988

QUESTIONS FROM SENATOR McCLURE.

General

1. The IEA has proposed to expand contacts and information exchange with oil producing countries. However, at the 11 May 1987 Ministerial meeting Secretary Herrington reiterated firm U.S. opposition to certain multilateral producer and consumer contacts.

   a. What are the objectives of the IEA in fostering such expanded contacts and information exchange?

   b. Does the U.S. agree with these general objectives? If not, why not?

   c. What is the U.S. position on expanded IEA contacts and information exchange with OPEC? What is the basis for this position? Does the IEA agree with this position? If not, why not?

2. Would you provide for the record copies of the following documents:

   a. currently operable IEA policy statements governing implementation of the International Energy Agreement?

   b. beginning with 1985, IEA communiques covering all meetings of the IEA Governing Board at the Ministerial Level?

   c. other IEA communiques covering meetings of the IEA Governing Board during 1987 and 1988?

   d. the 1987 Review of National Energy Policies and the Report to the Governing Board on Main Issues of the 1987 Review of National Energy Policies?

   e. the 1988 Review of the National Energy Program of the United States?

   f. the IEA's current appraisal of the international oil situation?

Energy Emergency Preparedness

3. Would you provide for the record a copy of the U.S. Plan of Action to Implement the International Energy Program?

4. Reportedly the U.S. position is that the costs of October 1988 emergency response system test (AST-6) should be absorbed in the regular IEA budget despite previous Governing Board decisions to the contrary.

   a. What is the status of this decision? What is the basis for the U.S. position?

   b. What effect would adoption of the U.S. position have on the success of AST-6 in achieving its intended objectives?

   c. Reportedly the U.S. disagrees with some of the objectives of AST-6; in particular, the inclusion of price considerations? What effect does this have on the U.S. position?

   d. How much money is involved: in the aggregate, and the U.S. share?

5. What is the IEA position on demand restraint programs? What is their appraisal of the U.S. programs in this regard? Does the U.S. agree with the IEA appraisal? If not, why not?

6. Would you provide for the record a copy of the IEA's Appraisal of AST-5? Also provide the U.S. Government's comments on the IEA's Appraisal, if any?

7. Would you provide for the record a copy of the IEA's Appraisal of the CERM Test? Also provide the U.S. Government's comments on the IEA's Appraisal, if any?

Strategic Petroleum Stocks

8. The U.S. has supported increasing strategic stocks (under government control). What IEA member countries support this position? What IEA member countries have expressed doubts about this position? On what basis?

9. What are the total stocks held in the aggregate and by each IEA member state in compliance with the International Energy Agreement? On an aggregate and individual country basis how do these levels compare to the IEA obligation of a minimum of 90 days of net oil imports?

Other

10. Would you provide for the record a copy of the conclusions on Energy and the Environment adopted by the Governing Board at their July 1985 meeting, and any subsequent policy positions approved by the Governing Board, or documents implementing such policies?

11. Would you provide for the record a copy of the following documents:

    a. IEA Report on the Energy Policy Implications of Environmental Controls?

    b. the IEA's Third Coal Review?

    c. the currently operable IEA policy statements on Energy Research, Development and Demonstration?

QUESTIONS FROM SENATOR MURKOWSKI Hearing on S. 2205, May 12, 1988

LNG EXPORT

12. In 1983, an International Energy Agency Agreement encouraged member nations to buy more natural gas from OECD countries. Supplies in Norway and Alaska were singled out as areas in which to move forward.

a. With the expansion of trade relations with the Soviet Union underway, will IEA members hold to the agreement to limit gas imports from the Soviet Union?

b. Why has Japan been so slow to follow through on Alaska LNG? Are they ignoring the energy security aspects that the IEA was set up to protect?

c. If the IEA May 1983 agreement has any teeth, why has Japan issued on official energy plan that calls for no new natural gas use in power generation when current commitments expire?

ANS CRUDE OIL EXPORT QUESTIONS

13. Eventhough the prohibitions on the export of crude oil contained in Title I of the Energy Policy and Conservation Act are not under consideration here today, in light of the recent Trade Bill discussions and the controversy concerning the export of petroleum products from Alaska, I want to briefly discuss export restrictions on Alaska crude oil and petroleum products in the context of the IEA.

a. Are the present prohibitions on the export of Alaska crude oil consistent with the position of the IEA?

b. In prohibiting the export of Alaska oil is the U.S. failing to live up to its international responsibilities?

Department of Energy
Washington, DC 20585

June 7, 1988

Honorable J. Bennett Johnston
Chairman
Committee on Energy and Natural
Resources
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

On May 12, 1988, Deputy Secretary William F. Martin appeared before your subcommittee to discuss S. 2203 a bill to extend the expiration date of title II of the Energy Policy and Conservation Act.

Following that hearing, you submitted written questions, on behalf of Senator Bumpers, Senator McClure, and Senator Murkowski for our response to supplement the record. Enclosed are the answers to those questions, which have also been sent to Senator Bumpers, Senator McClure, and Senator Murkowski.

These responses have been drafted jointly with the Department of State and are responsive to your letters of May 16 to Mr. Martin and Secretary of State Shultz.

If you have any questions, please have your staff call Michael Gilmore on 586-4277. He will be happy to assist.

Sincerely,

Rebecca Thompson

for Robert G. Rabben
Assistant General Counsel
for Legislation

Enclosures

QUESTIONS SUBMITTED BY SENATOR DALE BUMPERS

Question 1: You have alluded to procedures being finalized by the IEA to coordinate use of emergency oil stocks during an emergency. Could you please describe how the procedure -- which you call the "Coordinated Emergency Response Measures" or CERM -- would actually work?

Answer: The July 1984 IEA Governing Board Decision on Stocks and Supply Disruptions recognized the importance of drawing down stocks early in a significant oil supply disruption and established a framework for international consultation among IEA/OECD nations that could contribute meaningfully to a coordinated stockdraw. The framework for consultation provides a means of developing a coordinated response which is flexible and non-formulaic.

In April 1986, the IEA agreed that implementation procedures were needed to ensure that the consultative process and coordinated response proceed in an orderly and timely fashion. These procedures are set forth in the Operations Manual for Coordinated Emergency Response Measures (CERM). A first test of these procedures was conducted successfully in January-February 1988.

The procedures provide that a Consultative Group meet early in a disruption to carry out the consultation specified in the July 1984 Decision (e.g., to determine what volume and duration of stockdraw would be appropriate; to reach consensus on the stockdraw individual countries plan to take by national decision; and to recommend other actions to support stockdraw). In line with the Decision, this Group is open to all members of the IEA and OECD that are in a position to contribute meaningfully to a coordinated stockdraw -- either by means of a physical drawdown of stocks or by implementation of mutually

reinforcing measures, such as fuel switching, increased domestic oil production, demand restraint, etc. Representatives to the Group are expected to have authority to act on behalf of their governments in the negotiation of a coordinated response. The Group would be convened by the Executive Director of the IEA when in his or her opinion a significant supply disruption exists or is imminent, and after consultation with the Chairman of the IEA Governing Board.

The results of the consultation would be reported promptly to the Governing Board for consideration in reaching its overall decision. Following Governing Board action, countries would implement their coordinated response programs as agreed to in the consultation. (Prior to the consultation, however, governments are expected to engage in necessary pre-implementation activities so that implementation could proceed quickly once agreement is reached.)

Each country's performance and the effectiveness of the overall response would be monitored by the Secretariat. As time progresses, additional meetings of the Consultative Group and Governing Board would be held to review the disruption situation and to consider revisions to coordinated response, including termination.

In September 1987, the Operations Manual was provisionally approved by the IEA Governing Board to serve as a basis for the first CERM Test. The Manual was recently revised in light of the test experience, with the expectation that the IEA Standing Group on Emergency Questions will consider the Operations Manual for approval this June.

Question 2(a): Secretary Martin mentioned the IEA requirement that member nations maintain 90 days of emergency oil stocks. Mr. Ferriter says on page 14 of his statement that Japan has about 50 days of import coverage. Does this mean that Japan is not meeting its IEA stock requirement?

Answer: Japan's total stock level (including both company and government-owned stocks) is about 525 million barrels representing 126 days of 1987 net imports. This more than meets the IEA stockholding obligation. Mr. Ferriter referred only to coverage from government-owned oil stocks, which are a portion of total stocks.

2(b): Which of the IEA member nations are now meeting the 90 day stock requirement? Are private stocks considered as meeting the requirement? Please provide for the record a list of IEA member nations, their current stocks, and the number of days of import coverage represented by those stocks?

Answer: See attached Table 1 which contains a list of individual country stock positions including days of 1987 net imports, which is the measure used to determine whether a member is meeting the 90-day minimum stock holding obligation. As of January 1, 1988, most IEA member countries were in compliance with the 90-day requirement. Private stocks less the 10 percent minimum operating requirements deducted in accordance with the IEP Agreement, are counted toward the 90-day stockholding obligation.

Table 1

STOCKS ON LAND IN IEA COUNTRIES
as of January 1, 1988
(millions of barrels or 'days')

Country	Company Stock Level	Entity Stock Level	Gov't Stock Level	Total Stock Level	Days(1) 87 Net Imports
Canada	120	-	-	120	-
USA (2)	862	-	534	1396	236
NORTH AMERICA	982	-	534	1516	236
Australia (3)	35	-	-	35	2053
Japan	366	-	159	525	126
New Zealand	7	-	-	7	167
PACIFIC	408	-	159	567	135
Austria	18	2	-	20	91
Belgium	39	-	-	39	106
Denmark	23	14	-	38	342
Germany	106	124	53	283	129
Greece	31	-	-	31	143
Ireland	7	-	-	7	92
Italy	165	-	6	171	107
Luxembourg	2	-	-	2	75
Netherlands	40	13	-	53	222
Norway	18	-	-	18	-
Portugal	20	-	-	20	121
Spain	61	-	-	61	82
Sweden	60	-	10	69	214
Switzerland	41	-	-	41	152
Turkey	18	-	-	18	42
United Kingdom	129	-	-	129	-
EUROPE	777	154	69	1002	123
IEA TOTAL	2168	154	763	3085	165
France	123	-	-	123	-

NOTE: Totals may be different than sums of components due to rounding.

source: IEA Oil Market Report, April 1988

(1) Days of net imports calculated according to emergency reserve definitions by adjusting stock levels for unavailable oil and naphtha stocks, by adjusting net imports for stock changes, international marine bunkers and naphtha consumption, and by adjusting products by 1.065. Countries having no emergency reserve commitment (i.e., net exporters) are excluded.

(2) USA utility stocks excluded to be consistent with IEP guidelines for emergency reserve calculations.

(3) Australian net imports during 1986 and 1987 were very low resulting in extremely high levels of net imports coverage.

Question 3: As your testimony indicates, IEA is quite active even in the absence of a major oil shortage. I understand that oil companies and nations working in the IEA as a forum have in the past resolved regional or national oil shortages that threatened to escalate into a situation that might trigger the IEA sharing plan. Could you give us any specific examples of such IEA intervention -- I understand that an oil supply problem several years ago in Turkey is one example.

Answer: The IEA served as a forum for addressing oil supply shortage situations at the time of the Iranian revolution. In the spring of 1979, in the wake of the Iranian revolution, the IEA adopted a proposal urging countries to reduce consumption by 5 percent. This target was to be met through fuel switching, demand restraint, etc., but no specific program was indicated. During that time Sweden experienced a shortage and requested that the "selective" IEA trigger be activated. This request was denied as the shortage was seen to be a result of Sweden's price control policy, which discouraged companies from importing oil into Sweden. This situation was resolved through informal negotiation and Sweden eventually altered its pricing policy. Later that year, the IEA considered the problem of increases in commercial stocks which were believed to have resulted from speculation in the market. Members agreed to informal country-industry consultation on stocks policies to avoid these problems.

Finally, in late 1980, Turkey also had a problem acquiring needed supply, primarily due to the increase of oil prices at that time. This was also handled through informal consultation with the Turkish government and the oil industry without activating the sharing system.

Question 4: If there is any one message that emerges from your testimony, it is that increasing energy efficiency is about the only way the major industrialized nations can limit their dependence on Persian Gulf oil, especially for the transportation sector. The "geological facts of life," as Mr. Ferriter put it, are quite ominous. Yet on page 16 of Sec. Martin's statement there is a chart called "International Energy Security Strategy" and it does not list energy conservation or energy efficiency at all. Of the noteworthy IEA RD&D projects described on page 29, none relate to energy efficiency. Yet on page 25, Sec. Martin says that energy conservation has since 1973 reduced IEA energy consumption by the oil equivalent of the total annual oil production of IEA countries. What is the average energy consumption per day of the IEA countries? What was it in 1973? Why isn't energy conservation a part of the IEA energy security strategy?

Has the U.S. sought to promote it as part of that strategy? Please be specific.

Answer: The most recent IEA energy figures (to be published soon in the "1987 Review of Energy Policies and Programmes of IEA Countries") show that total energy demand per day for the 21 IEA member countries in 1986 was 3553.7 million tons of oil equivalent (mtoe), the equivalent of 71 million barrels of oil per day (mmbd). In 1973 total energy demand was 3329.9 mtoe, the equivalent of 66.6 mmbd. Actual oil consumption for the 21 countries fell nearly 5 million barrels per day between 1973 and 1986, with oil's share of energy demand declining from 52.5 percent in 1973 to 43 percent in 1986.

Considering the increases in economic growth and population of the 21 member countries from 1973 to 1986, together with lower oil prices in 1986, an increase in total energy demand of just 7 percent over this 13 year period is commendable and a testimony to the energy efficiency and conservation efforts of both IEA governments and consumers. Overall energy intensity in IEA countries, as measured by the ratio of energy demand to gross domestic product (GDP), declined 1.9 percent annually during this period, while the ratio of oil demand

to GDP declined 3.4 percent annually over the same period. This progress was documented in the IEA's 1987 publication, "Energy Conservation in IEA Countries," which evaluated the efforts of governments to develop effective conservation policies over the period from 1973 to 1986.

Energy conservation, therefore, is an integral part of the IEA's energy security strategy, both in terms of the IEA's stated mission and of its organization. The basic principles of the IEA's 1974 founding charter, the Agreement on an International Energy Program, include "reduc(ing) dependence of member countries on imported oil through cooperative efforts to increase energy efficiency...." In 1976 and 1977 IEA countries adopted a "Long-Term Cooperation Program and Twelve Principles for Energy Policy," to guide member countries in planning and implementing their energy policies. Annual reviews of members' energy policies reveal whether or not countries are encouraging energy conservation and efficiency according to the Principles.

Every IEA Ministerial Meeting has concluded with decisions on how IEA governments should pursue energy conservation. At their last meeting in May 1987, Ministers agreed that "All IEA countries attach high importance to energy conservation through increases in the efficiency with which energy is used.... Since 1974, due to high energy prices and to conservation policies, there has been a significant improvement in the efficiency with which energy is used in IEA countries. A large potential remains for further improvements on an economic basis. Ministers agreed to promote, in a way best suited to circumstances in each of their countries, coherent and forceful strategies to realize this potential in all the main sectors of consumption, including the removal of market distortions which prejudice such a valuable objective."

Within the IEA's organization, conservation issues are developed for the main policy-making group, the Governing Board, through a series of working bodies dedicated to examining the policy, research and development, and technical aspects of energy conservation. The Standing Group on Long Term Cooperation (SLT) and its Subgroup on Energy Conservation address policy issues. The Committee on Research and Development (CRD) and its Working Party on End Use address RD&D issues. There is careful coordination among the groups due to the cross-over nature of the issues.

Conservation is an important component of U.S. strategy in promoting U.S. energy policy goals in the IEA. The United States pursues its conservation strategy in the IEA in two ways: a high profile of participation in all IEA conservation activities and leadership in promoting work that is useful to policy-makers in the IEA nations. Recent and ongoing efforts in this regard are as follows:

The U.S. chairs the SLT Subgroup on Energy Conservation. The U.S. initiated the IEA Symposium on Energy Demand, which examined the impact of lower oil prices and other demand trends in September 1987. The U.S. will participate in an IEA Workshop on District Heating and Combined Heat and Power in June 1988 and will lead an IEA Workshop on Conservation Activities of Utilities in September 1988. The U.S. hosted the first of a series of IEA workshops on end-use technologies in Florida in January 1988.

In March 1988, the U.S. was one of nine signatory countries for the latest IEA RD&D agreement concerning the IEA Information Centre for the Analysis and Dissemination of Demonstrated Energy Technologies (CADDET). The goal of the

centre is to improve the exchange of information about technologies for reducing energy use in industry, transportation and the residential and commercial sectors, and thus to encourage wider use of energy-saving devices. The centre will spend most of its time during the first year in collecting and cataloguing information about the many energy-efficiency demonstration projects underway in IEA countries. For the remainder, the centre will distribute information about these projects and analyse special technology topics or problems. The initial participants in the CADDET centre are Denmark, Finland, Italy, the Netherlands, Norwar, Sweden, Switzerland, the United Kingdom and the United States. The operating budget for the first year is approximately US $500,000.

In summary, energy conservation is central to the policy agendas of the U.S. and the IEA.

Question 5(a): Please provide a detailed explanation of what our government's contingency plans are for addressing a disruption in Persian Gulf crude oil supply.

Answer: On April 1, 1988, the Secretary of Energy and the Secretary of Defense submitted to the Congress a report entitled, "Contingency Plans to Deal with Disruptions in Persian Gulf Crude Oil Supply." This report was prepared, with the assistance of the Department of State, to fulfill the requirement stated in Section 1222 of the National Defense Authorization Act for Fiscal Years 1988 and 1989 (Pub. L. No. 100-180). The report contains a complete description not only of our contingency plans in the event of an energy emergency, but of additional factors relating to our overall energy security. A copy of the report is attached. (Committee note.--The report has been retained in committee files.)

During an energy emergency stemming from a disruption of supplies in the Persian Gulf -- or from any other source -- the United States would respond in the following general manner:

- The Department of Energy would activate its internal Energy Emergency Management System to assess the situation and recommend response options, in conjunction with other Federal agencies.

- The U.S. Government's response strategy would be coordinated with the other members of the IEA that are capable of contributing to a coordinated response.

- In addition to relying on a market-based response policy free of government regulation, the U.S. Government may consider other options in response to a major oil supply disruption, including:

- drawing down the Strategic Petroleum Reserve early and in large volumes, in coordination with other IEA responses:
- implementing emergency energy conservation in federal facilities, as provided by the Federal Energy Management Program;
- waiving certain legislative restrictions, such as Clean Air Act emissions standards; and
- other responses, as appropriate.

Of course, the overall response strategy and the range of options considered, will depend on the specific situation.

5(b): The Administration seems to take comfort in the smaller reliance on Persian Gulf oil of our country as compared to that of our allies. If a major disruption in Persian Gulf oil did occur, wouldn't the force majeure clauses in most oil contracts affect our supply as well?

Answer: The United States has made significant progress in reducing its vulnerability to a disruption from the Persian Gulf. Nevertheless, the Administration recognizes that the United States cannot completely insulate itself from the effects of a major oil supply disruption, given the integrated nature of the world oil market. Thus, as the world's largest consumer of crude oil and refined petroleum products, the United States has sought to enhance energy security by building oil stocks, maximizing domestic production, diversifying foreign suppliers of oil, and encouraging our allies to take similar actions. In the event of a significant disruption of oil supplies from the Persian Gulf, U.S. imports from that region could well be interrupted. However, U.S. imports from other exporting countries, such as Canada, Mexico, Venezuela, etc., should not be subject to force majeure, although in a rising market there likely will be significant competition for oil supplies from these secure sources.

5(c): Wouldn't the increase in the price of oil affect us as well?

Answer: Yes, a supply disruption and the resulting price increases would affect all oil consuming nations. In order to mitigate such adverse effects of a supply disruption, cooperation with other member countries in the IEA is essential. A coordinated response involving stocks and complementary measures should allow for IEA economies to adjust to the disruption while minimizing economic damage, and providing time to seek a diplomatic solution.

Question 6(a): A second plan of action describing which actions by oil companies will be covered by the antitrust and breach of contract defenses has been approved, is that correct? Please provide a copy of that plan for the Committee's records.

Answer: The Secretary of Energy approved the "Second Plan of Action to Implement the International Energy Program" on January 26, 1988, following the Attorney General's approval on December 18, 1987. Attached are a copy of the Second Plan of Action and the following related documents: *

- The Department of Energy's February 2, 1988, Federal Register notice of approval of the Second Plan of Action;

- the Department of Justice's March 22, 1988, Federal Register notice amending the "Voluntary Agreement and Plan of Action to Implement the International Energy Program" to incorporate the Second Plan of Action and to make conforming technical changes to the Voluntary Agreement.

6(b): There are 17 oil companies that are IEA Reporting Companies. Have any oil companies refused to participate? Who? Why?

Answer: The Administration has emphasized to U.S. Reporting Companies participating in the Voluntary Agreement the importance that it attaches to the International Energy Program as a vehicle for achieving U.S. energy security objectives. We have been pleased by the continuing support of U.S. companies. In turn, the U.S. Government has been especially sensitive to placing additional burdens on U.S. companies, such as might result from their participation in IEA

*Committee note.--Documents submitted have been retained in committee files.

tests, and we believe that we have been successful in our efforts. Although the number of U.S. Reporting Companies is down slightly, this is due primarily to mergers and acquisitions in the U.S. oil industry. In 1986, Murphy Oil Company withdrew from the Voluntary Agreement, citing competing requirements for company resources.

QUESTIONS SUBMITTED BY SENATOR JAMES A. MCCLURE

Question 1(a): The IEA has proposed to expand contacts and information exchange with oil producing countries. However, at the 11 May 1987 Ministerial meeting, Secretary Herrington reiterated firm U.S. opposition to certain multilateral producer and consumer contacts.

What are the objectives of the IEA in fostering such expanded contacts and information exchange?

Answer: Article 44 of the International Energy Program provides in part that: "The Participating Countries will endeavor to promote cooperative relations with oil producing countries ... (and) will keep under review developments in the energy field with a view to identifying opportunities for and promoting a purposeful dialogue, as well as other forms of cooperation, with producing countries ..."

This language continues to guide the IEA search for meaningful interaction with producing countries and Secretary Herrington's overall remarks at the May 11 Ministerial meeting reflect our continuing commitment.

1(b): Does the U.S. agree with these general objectives? If not, why not?

Answer: The Secretary's specific opposition to multilateralism is to make clear that the U.S. will not engage in a multilateral dialogue on energy similar to the Conference on International Economic Cooperation of the late 1970s. We believe any such dialogue would lead inevitably to negotiations on price and quantity of oil aimed nominally at oil price stabilization, but intended ultimately by producers to raise prices.

1(c): What is the U.S. position on expanded IEA contacts and information exchange with OPEC? What is the basis for this position? Does the IEA agree with this position? If not, why not?

Answer: The U.S. takes a similar stance of opposition to any structured IEA contact with OPEC, OAPEC or other oil producing country associations whose basic price objectives are incompatible with U.S. macro-economic interests. Moreover, formal discussions with such associations could be seen as implying U.S. endorsement, or even encouragement, of their price fixing activities. The U.S. takes the position that government-to-government discussion on energy issues between producers and consumers should be bilateral. We are actively pursuing this approach in a broad series of contact at all levels.

The U.S. has, however, promoted other limited forms of IEA interaction with producing countries, regional organizations and state oil companies. The objective is to enhance market transparency and to develop a more uniform world energy data base. As a whole, the IEA is in accord with this approach, with some countries urging a faster pace while others advocate a more cautious approach.

Question 2: Would you provide for the record copies of the following documents:

a. currently operable IEA policy statements governing implementation of the International Energy Agreement?

b. beginning with 1985, IEA communiques covering all meetings of the IEA Governing Board at the Ministerial Level?

c. other IEA communiques covering meetings of the IEA Governing Board during 1987 and 1988?

d. the 1987 Review of National Energy Policies and the Report to the Governing Board on Main Issues of the 1987 Review of National Energy Policies?

e. the 1988 Review of the National Energy Program of the United States?

f. the IEA's current appraisal of the international oil situation?

Answer 2: The attached documents are in response to your request and are tabulated accordingly; the conclusions of the April 1988 IEA Governing Board will be forwarded upon their receipt.

Committee note--Documents submitted have been retained in committee files.

Question 3: Would you provide for the record a copy of the U.S. Plan of Action to Implement the International Energy Program?

Answer: The Secretary of Energy approved the "Second Plan of Action to Implement the International Energy Program" on January 26, 1988, following the Attorney General's approval on December 18, 1987. Attached are a copy of the Second Plan of Action and the following related documents:

- The Department of Energy's February 2, 1988, Federal Register notice of approval of the Second Plan of Action;

- the Department of Justice's March 22, 1988, Federal Register notice amending the "Voluntary Agreement and Plan of Action to Implement the International Energy Program" to incorporate the Second Plan of Action and to make conforming technical changes to the Voluntary Agreement.

Committee note--Documents submitted have been retained in committee files.

Question 4(a): Reportedly the U.S. position is that the costs of October 1988 emergency response system test (AST-6) should be absorbed in the regular IEA budget despite previous Governing Board decisions to the contrary.

What is the status of this decision? What is the basis for the U.S. position?

Answer: The IEA's 1988 budget, which included the costs for the October 1988 AST-6 test, was approved at the IEA's December 3, 1987 Governing Board meeting. The Governing Board agreed to defer some planned equipment expenditures until 1989, so that the total IEA budget would not exceed zero real growth. The U.S. position was shaped by increasingly tight budgetary constraints in our international organizations contributions account. While we have been able to fully meet our IEA obligations to date, the U.S. is faced with large and growing arrearages in our obligatory contributions to a number of international organizations. In this environment, we thought it critical to maintain the 1988 IEA budget of zero real growth, even though this was not in keeping with previous IEA agreements that the costs of periodic tests of the allocation system should be treated as a separate non-recurring expenditure apart from the regular IEA budget.

4(b): What effect would adoption of the U.S. position have on the success of AST-6 in achieving its intended objectives?

Answer: In requesting the IEA to maintain its 1988 budget of zero real growth, the U.S. made it clear we supported holding AST-6 in 1988, as earlier agreed. Since the requested budget deferrals were taken from other accounts, there will be no effect on AST-6.

4(c): Reportedly the U.S. disagrees with some of the objectives of AST-6; in particular, the inclusion of price considerations? What effect does this have on the U.S. position?

Answer: The U.S. decision was made solely for budgetary reasons and policy issues (e.g., price) connected with the operation of the test were not a factor.

4(d): How much money is involved in the aggregate, and the U.S. share?

Answer: AST-6 costs are budgeted at approximately $263,000 (at current exchange rates) of which the U.S. share is 25 percent or $68,000.

Question 5: What is the IEA position on demand restraint programs? What is their appraisal of the U.S. programs in this regard? Does the U.S. agree with the IEA appraisal? If not, why not?

Answer: Many IEA countries continue to believe in the efficacy of government-mandated demand restraint programs as a means of dealing with a supply disruption, even some countries that have considerable oil stockpiles. However, at last year's IEA-sponsored conference on demand restraint it became clear that many countries have not carried out adequate analysis to support their position. For example, the technical analyses presented at this conference failed to distinguish between program effects and market effects, or to take into account the cost of implementing these measures.

The recent IEA review of U.S. emergency response programs recommended that "[t]he U.S. Government should examine the positive aspects of certain demand restraint measures, particularly light-handed ones, which could be included as a contingent part of emergency response measures when coping with a supply disruption." So-called light-handed measures include programs such as speed limit reductions and building temperature restrictions.

The U.S. does not believe that such programs would be an effective or economically sound means of dealing with a disruption. We continue to believe that the market, although imperfect, is the best way to allocate supply and that supplementing oil supply by drawing down the Strategic Petroleum Reserve would be the most effective means of responding to an emergency. Experience has shown that government intervention involving allocation, price controls, and demand restraint is costly, inefficient and ineffective compared with market reliance.

The U.S. would, however, institute a comprehensive public information program to facilitate the economy's adjustment to a disruption. The objective of this program would be to provide a sound factual basis for resource allocation decisions by state and local governments, industry and consumers. Timely and accurate information on the nature and projected magnitude of the shortage would help all sectors of the economy to adjust without panic or unnecessary stockpiling. In addition, the U.S. Government could institute the emergency provisions of the Federal Energy Management Program under which energy use in Federal facilities would be reduced.

Question 6: Would you provide for the record a copy of the IEA's Appraisal of AST-5? Also provide the U.S. Government's comments on the IEA's Appraisal, if any?

Answer: Included herewith is a copy of the IEA appraisal of AST-5. The U.S. found this report generally acceptable and agreed that it should be approved by the IEA.

Committee note--Documents submitted have been retained in committee files.

Question 7: Would you provide for the record a copy of the IEA's Appraisal of the CERM Test? Also provide the U.S. Government's comments on the IEA's Appraisal, if any?

Answer: The Secretariat has not yet completed its work on the IEA appraisal of the CERM Test. We expect this appraisal to be presented by the Secretariat for members' approval at the next meeting of the IEA Standing Group on Emergency Questions, scheduled to take place in late June. We will send a copy to the Committee once it has been so approved.

The preliminary draft of this report indicates that participants generally agreed that the test was successful in that it accomplished its primary objectives of familiarizing them with the CERM procedures and exercising domestic emergency response measures in support of an early coordinated response. The U.S. shares this view. A copy of the U.S. appraisal of the CERM Test is herewith included.

Committee note--Documents submitted have been retained in committee files.

Question 8: The U.S. has supported increasing strategic stocks (under government control). What IEA member countries support this position? What IEA member countries have expressed doubts about this position? On what basis?

Answer: Since the July 1984 IEA Governing Board Decision on Stocks and Supply Disruptions, the U.S. has continually urged our IEA partners to build strategic stocks (stocks in excess of minimum operating inventories, preferably government owned, but at least under clear and definite government control). In addition, we have stressed the importance of rapid and coordinated drawdown of strategic stocks early in a supply disruption, as provided for in the July 1984 Decision.

Our efforts have shown results:

Belgium is preparing new legislation which will place physical control of company-held, mandatory reserve stocks under an independent authority.

Austria has amended its stockpiling law to require all importers to contribute stocks to its stockholding entity.

Canada, which is a net exporter, has produced a policy paper suggesting that a "modest" petroleum reserve may be appropriate, and is undertaking a study in this regard.

France (not an IEA member) is considering creating a 45-day, government-controlled stockpile.

Germany has amended its stockpiling law to substantially increase the reserve stocks held by its stockholding entity and thus, assure better availability of emergency reserves.

Japan has been steadily increasing the size of its government-owned reserve and will continue to do so over the next year. Japan is considering increasing the government's proportion of reserve stockholdings, which would result in a larger government stockpile.

The Netherlands has amended its stockpiling law to establish a government-controlled, centralized stockpile and plans to hold stocks from 10 to 20 percent in excess of its legal IEA/EC obligation.

Turkey is considering legislation for putting certain private and public institutions under a stockholding obligation.

Some countries have indicated their reluctance to build substantial volumes of government-owned stocks because of their cost, preferring instead to rely on demand restraint measures for emergencies. The United States has indicated its skepticism regarding the sufficiency and efficacy of that approach.

Question 9: What are the total stocks held in the aggregate and by each IEA member state in compliance with the International Energy Agreement? On an aggregate and individual country basis how do these levels compare to the IEA obligation of a minimum of 90 days of net oil imports?

Answer: See attached Table 1.

Table 1

STOCKS ON LAND IN IEA COUNTRIES
as of January 1, 1988
(millions of barrels or 'days')

Country	Company Stock Level	Entity Stock Level	Gov't Stock Level	Total Stock Level	Days(1) 87 Net Imports
Canada	120	-	-	120	-
USA (2)	862	-	534	1396	236
NORTH AMERICA	982	-	534	1516	236
Australia (3)	35	-	-	35	2053
Japan	366	-	159	525	126
New Zealand	7	-	-	7	167
PACIFIC	408	-	159	567	135
Austria	18	2	-	20	91
Belgium	39	-	-	39	106
Denmark	23	14	-	38	342
Germany	106	124	53	283	129
Greece	31	-	-	31	143
Ireland	7	-	-	7	92
Italy	165	-	6	171	107
Luxembourg	2	-	-	2	75
Netherlands	40	13	-	53	222
Norway	18	-	-	18	-
Portugal	20	-	-	20	121
Spain	61	-	-	61	82
Sweden	60	-	10	69	214
Switzerland	41	-	-	41	152
Turkey	18	-	-	18	42
United Kingdom	129	-	-	129	-
EUROPE	777	154	69	1002	123
IEA TOTAL	2168	154	763	3085	165
France	123	-	-	123	-

NOTE: Totals may be different than sums of components due to rounding.

source: IEA Oil Market Report, April 1988

(1) Days of net imports calculated according to emergency reserve definitions by adjusting stock levels for unavailable oil and naphtha stocks, by adjusting net imports for stock changes, international marine bunkers and naphtha consumption, and by adjusting products by 1.065. Countries having no emergency reserve commitment (i.e., net exporters) are excluded.

(2) USA utility stocks excluded to be consistent with IEP guidelines for emergency reserve calculations.

(3) Australian net imports during 1986 and 1987 were very low resulting in extremely high levels of net imports coverage.

Question 10: Would you provide for the record a copy of the conclusions on Energy and the Environment adopted by the Governing Board at their July 1985 meeting, and any subsequent policy positions approved by the Governing Board, or documents implementing such policies?

Answer: The relevant portion of the 1985 Ministerial communique is attached, as well as the language on the same issue from the 1987 Ministerial communique.

Committee note--Document submitted has been retained in committee files.

Question 11: Would you provide for the record a copy of the following documents:

a. IEA Report on the Energy Policy Implications of Environmental Controls?

b. the IEA's Third Coal Review?

c. the currently operable IEA policy statements on Energy Research, Development and Demonstration?

Answer 11(a): The documents requested under a and b of your questions are currently being prepared for publication and will be forwarded subsequent to their publication. The relevant documentation for part c is attached.

Committee note--Document submitted has been retained in committee files.

QUESTIONS SUBMITTED BY SENATOR FRANK H. MURKOWSKI

Question 12(a): In 1983, an International Energy Agency Agreement encouraged member nations to buy more natural gas from OECD countries. Supplies in Norway and Alaska were singled out as areas in which to move forward.

With the expansion of trade relations with the Soviet Union underway, will IEA members hold to the agreement to limit gas imports from the Soviet Union?

Answer 12(a): European IEA members countries have held to both the spirit and the letter of the May 1983 IEA Ministerial Conclusions on natural gas. The signing of the agreement to develop Norway's Sleipner and Troll fields fully meets the letter of the IEA Conclusions and, much more, showed courage and determination on both sides of the deal to reach an agreement despite great uncertainties regarding long-term gas demand and prices. Further, reserves of the Troll field far exceed the amount contracted for sale, thus holding open the prospect for sales of additional volumes later on. Finally, the U.S. has used the IEA's annual country review process to assure that members avoid undue dependence on gas imports from the Soviet Union.

12(b): Why has Japan been so slow to follow through on Alaska LNG? Are they ignoring the energy security aspects that the IEA was set up to protect?

Answer: Since the May 1983 IEA Agreement, Japanese companies have agreed to one new contract: to purchase 6 million tons of LNG annually for 20 years from Australia, an IEA member country. Additionally, Japan recently agreed to extend its contract for Alaskan LNG from 1989 to 2004. Finally, Japanese companies participated in a feasibility study of a new Alaskan LNG project. Two deals

under discussion at the time of the 1983 agreement -- one with Canada and one with the Soviet Union -- have since collapsed due to downward revisions of Japanese gas demand. In summary, Japan has increased its commitments to purchase gas supplies from OECD countries and has made no commitment to import Soviet gas supplies. Thus, although the Administration shares your frustration that the United States has not succeeded thus far in increasing natural gas sales to Japan, Japan has honored fully its commitment to the IEA energy security agreements in respect to natural gas supplies.

12(c): If the IEA May 1983 agreement has any teeth, why has Japan issued an official energy plan that calls for no new natural gas use in power generation when current commitments expire?

Answer: As in the case of oil, Japan has very limited indigenous natural gas supplies and must import about 95 percent of its natural gas requirements. In order to reduce its energy import dependence, Japan has carried out an ambitious and successful program to increase the share of nuclear power in the electricity generation sector. This program fully accords with the May 1983 agreement's confirmation of the importance of "...a major and increasing role for nuclear power in many countries...." The success of Japan's nuclear and energy conservation programs has meant a reduction in requirements for gas-fired electricity generation.

Question 13(a): Even though the prohibitions on the export of crude oil contained in Title I of the Energy Policy and Conservation Act are not under consideration here today, in light of the recent Trade Bill discussions and the controversy concerning the export of petroleum products from Alaska, I want to briefly discuss export restrictions on Alaska crude oil and petroleum products in the context of the IEA.

Are the present prohibitions on the export of Alaska crude oil consistent with the position of the IEA?

Answer: No. U.S. prohibitions on the export of Alaska crude oil are inconsistent with the May 1987 IEA Ministers' agreement that "They will also continue to reduce, with a view to eliminating, remaining trade barriers..."

13(b): In prohibiting the export of Alaska oil is the U.S. failing to live up to its international responsibilities?

Answer: Yes. In its most recent review of U.S. energy policy, the IEA again said that "The United States Government should... eliminate barriers to indigenous oil and gas production; these could include: removal of the ban on the export of Alaskan crude oil..."